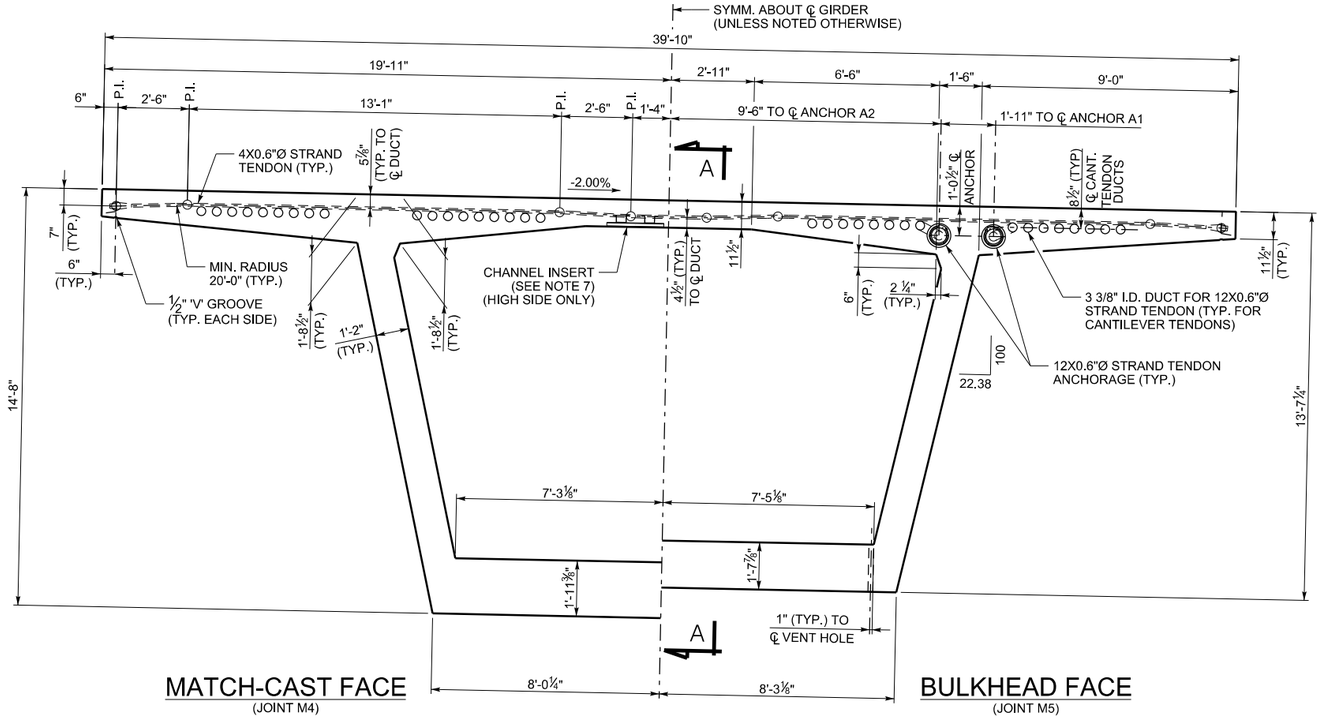
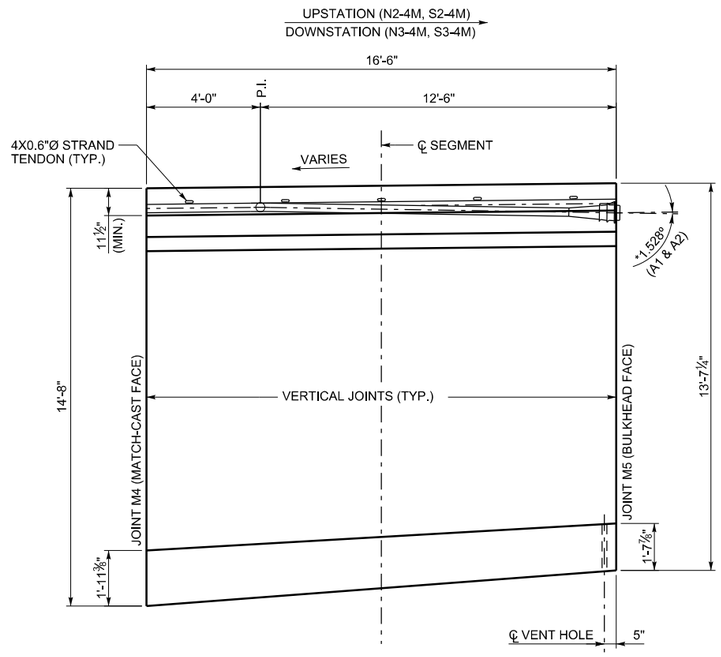
90% PRELIMINARY PLANS

ALL INFORMATION CONTAINED WITHIN IS TO BE CONSIDERED PRELIMINARY

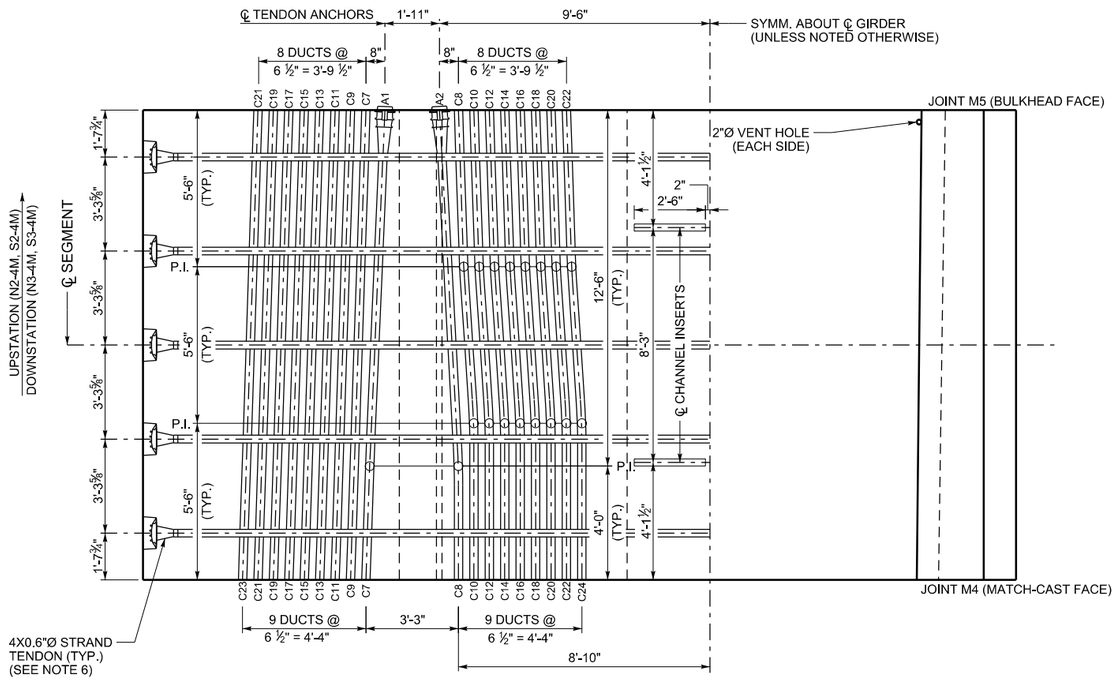
NOT FOR CONSTRUCTION



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)



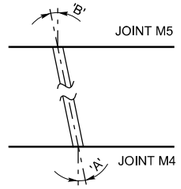
SECTION A-A
(ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB
PARTIAL PLAN BOTTOM SLAB

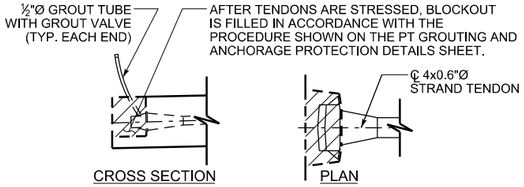
C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
- B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M4 DUCT POSITION	'A'	JOINT M5 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	0°	A2	3.054°
C9	1.880°	C7	1.880°
C10	0°	C8	1.880°
C11	1.880°	C9	1.880°
C12	0°	C10	1.880°
C13	1.880°	C11	1.880°
C14	0°	C12	1.880°
C15	1.880°	C13	1.880°
C16	0°	C14	1.880°
C17	1.880°	C15	1.880°
C18	0°	C16	1.880°
C19	1.880°	C17	1.880°
C20	0°	C18	1.880°
C21	1.880°	C19	1.880°
C22	0°	C20	1.880°
C23	1.880°	C21	1.880°
C24	0°	C22	1.880°



TRANSVERSE TENDON BLOCKOUT DETAIL

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-4M, S2-4M, N3-4M AND S3-4M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08
DRAWN	SJF	02/08
QUANT.	BTL	08/08
CHECK	DSL	08/08
CHECK	BTL	02/08
CHECK	KRM	08/08

SENIOR DESIGN ENGR. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVAL RECOMM. — DATE
APPROVED FOR USE BY UDOT — DATE

US-191; OVER COLORADO RIVER
RIVER BRIDGE - MOAB UTAH
SEGMENT 4M DIMS & PT DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 157 OF 190

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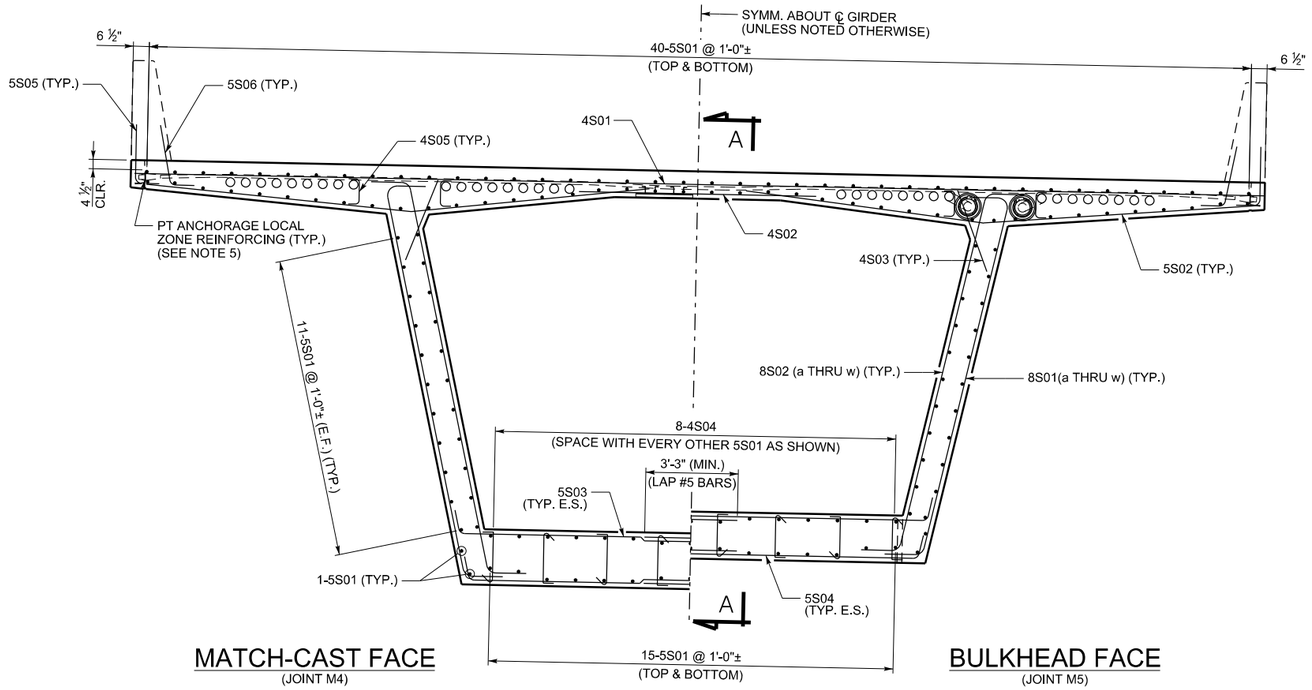
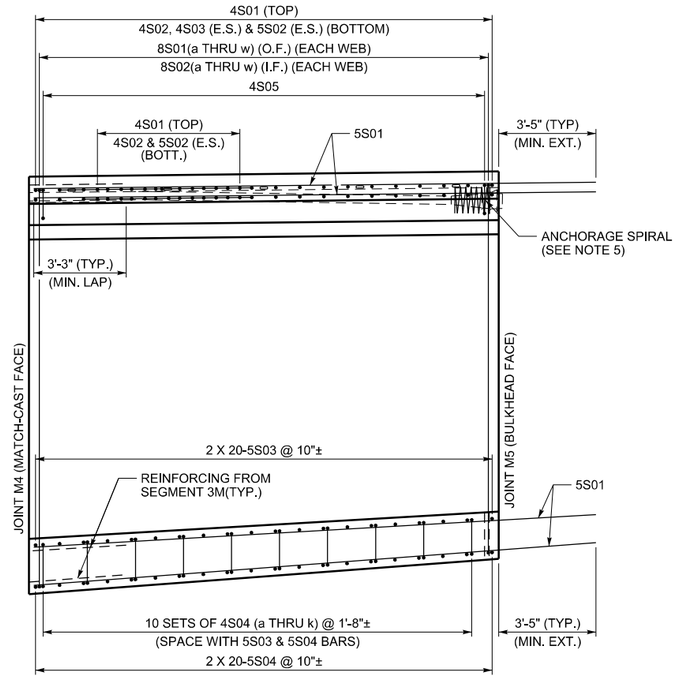
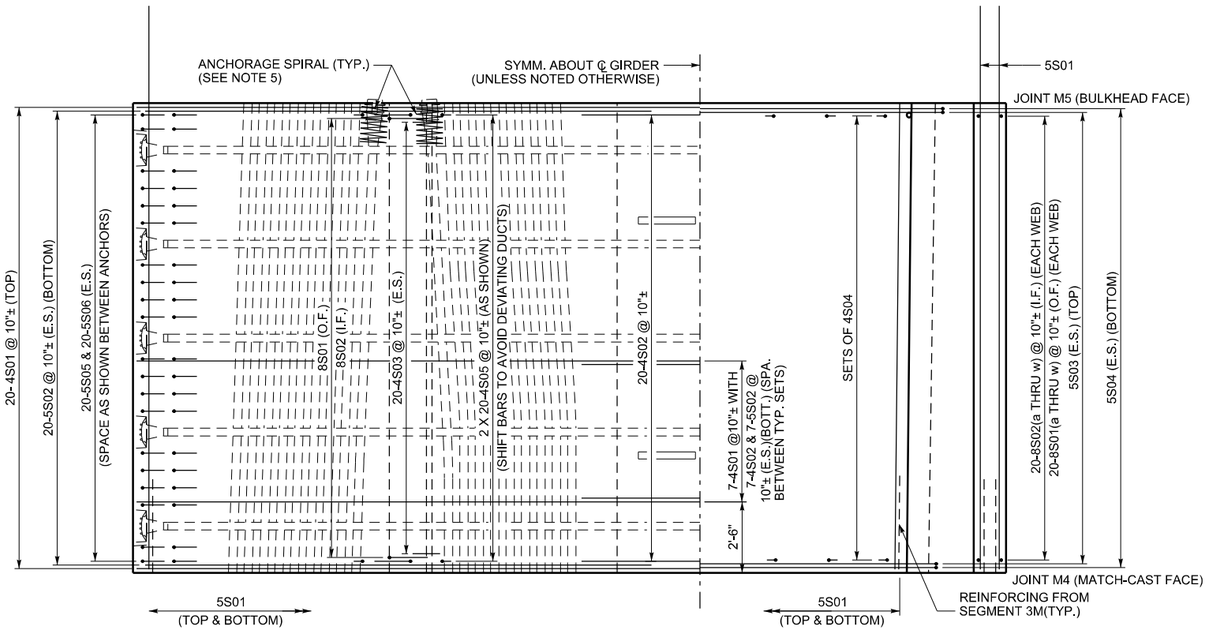
8/6/2008



CROSS SECTION



SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-4M, S2-4M, N3-4M AND S3-4M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 4M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 158 OF 190

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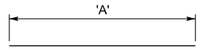
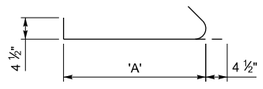
8/6/2008

SEGMENT TYPE 4M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-4M, S2-4M, N3-4M AND S3-4M.

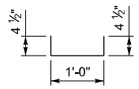
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	27	39'-7"	1068'-9"	39'-7"
4S02	TOP SLAB	4	27	8'-8"	234'-0"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	158	19'-9 1/2"	3127'-1"	19'-9 1/2"



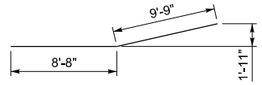
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S04a	BOTTOM SLAB	4	8	2'-5 1/4"	19'-6"	1'-8 1/4"
4S04b	BOTTOM SLAB	4	8	2'-4 7/8"	19'-3 1/8"	1'-7 7/8"
4S04c	BOTTOM SLAB	4	8	2'-4 1/2"	19'-0 1/4"	1'-7 1/2"
4S04d	BOTTOM SLAB	4	8	2'-4 1/8"	18'-9 1/4"	1'-7 1/8"
4S04e	BOTTOM SLAB	4	8	2'-3 3/4"	18'-6 3/8"	1'-6 3/4"
4S04f	BOTTOM SLAB	4	8	2'-3 1/2"	18'-3 1/2"	1'-6 1/2"
4S04g	BOTTOM SLAB	4	8	2'-3 1/8"	18'-0 5/8"	1'-6 1/8"
4S04h	BOTTOM SLAB	4	8	2'-2 3/4"	17'-9 3/4"	1'-5 3/4"
4S04j	BOTTOM SLAB	4	8	2'-2 3/8"	17'-6 7/8"	1'-5 3/8"
4S04k	BOTTOM SLAB	4	8	2'-2"	17'-4"	1'-5"



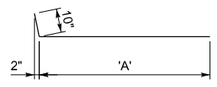
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



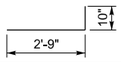
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	54	18'-5"	994'-6"



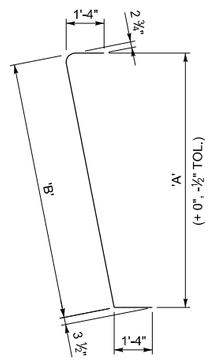
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40	10'-11 1/8"	437'-1"	10'-1 1/8"
5S04	BOTTOM SLAB	5	40	10'-7 3/8"	424'-7"	9'-9 3/8"
5S06	TOP SLAB	5	40	3'-7"	143'-4"	2'-9"



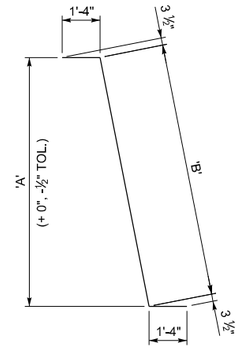
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2	17'-0 1/4"	34'-0 5/8"	14'-1 1/8"	14'-4 1/4"
8S01b	2	WEBS	8	2	16'-11 5/8"	33'-11 1/4"	14'-0 1/2"	14'-3 5/8"
8S01c	3	WEBS	8	2	16'-11"	33'-10"	13'-11 3/4"	14'-3"
8S01d	4	WEBS	8	2	16'-10 3/8"	33'-8 5/8"	13'-11 1/8"	14'-2 3/8"
8S01e	5	WEBS	8	2	16'-9 5/8"	33'-7 3/8"	13'-10 1/2"	14'-1 5/8"
8S01f	6	WEBS	8	2	16'-9"	33'-6"	13'-9 7/8"	14'-1"
8S01g	7	WEBS	8	2	16'-8 3/8"	33'-4 5/8"	13'-9 1/4"	14'-0 3/8"
8S01h	8	WEBS	8	2	16'-7 5/8"	33'-3 3/8"	13'-8 5/8"	13'-11 3/4"
8S01j	9	WEBS	8	2	16'-7"	33'-2"	13'-8"	13'-11"
8S01k	10	WEBS	8	2	16'-6 3/8"	33'-0 3/4"	13'-7 3/8"	13'-10 3/8"
8S01m	11	WEBS	8	2	16'-5 3/4"	32'-11 3/8"	13'-6 5/8"	13'-9 3/4"
8S01n	12	WEBS	8	2	16'-5"	32'-10 1/8"	13'-6"	13'-9"
8S01p	13	WEBS	8	2	16'-4 3/8"	32'-8 3/4"	13'-5 3/8"	13'-8 3/8"
8S01q	14	WEBS	8	2	16'-3 3/4"	32'-7 1/2"	13'-4 3/4"	13'-7 3/4"
8S01r	15	WEBS	8	2	16'-3 1/8"	32'-6 1/8"	13'-4 1/8"	13'-7 1/8"
8S01s	16	WEBS	8	2	16'-2 3/8"	32'-4 7/8"	13'-3 1/2"	13'-6 3/8"
8S01t	17	WEBS	8	2	16'-1 3/4"	32'-3 1/2"	13'-2 7/8"	13'-5 3/4"
8S01u	18	WEBS	8	2	16'-1 1/8"	32'-2 1/4"	13'-2 1/8"	13'-5 1/8"
8S01v	19	WEBS	8	2	16'-0 1/2"	32'-0 7/8"	13'-1 1/2"	13'-4 1/2"
8S01w	20	WEBS	8	2	15'-11 3/4"	31'-11 5/8"	13'-0 7/8"	13'-3 3/4"



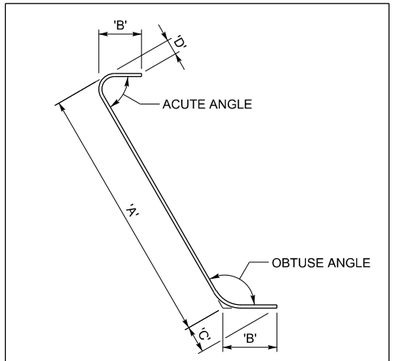
MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2	17'-1 1/8"	34'-2 1/8"	14'-1 1/8"	14'-5 1/8"
8S02b	2	WEBS	8	2	17'-0 3/8"	34'-0 7/8"	14'-0 1/2"	14'-4 3/8"
8S02c	3	WEBS	8	2	16'-11 3/4"	33'-11 1/2"	13'-11 3/4"	14'-3 3/4"
8S02d	4	WEBS	8	2	16'-11 1/8"	33'-10 1/4"	13'-11 1/8"	14'-3 1/8"
8S02e	5	WEBS	8	2	16'-10 1/2"	33'-8 7/8"	13'-10 1/2"	14'-2 1/2"
8S02f	6	WEBS	8	2	16'-9 3/4"	33'-7 5/8"	13'-9 7/8"	14'-1 3/4"
8S02g	7	WEBS	8	2	16'-9 1/8"	33'-6 1/4"	13'-9 1/4"	14'-1 1/8"
8S02h	8	WEBS	8	2	16'-8 1/2"	33'-5"	13'-8 5/8"	14'-0 1/2"
8S02j	9	WEBS	8	2	16'-7 7/8"	33'-3 5/8"	13'-8"	13'-11 7/8"
8S02k	10	WEBS	8	2	16'-7 1/8"	33'-2 3/8"	13'-7 3/8"	13'-11 1/8"
8S02m	11	WEBS	8	2	16'-6 1/2"	33'-1"	13'-6 5/8"	13'-10 1/2"
8S02n	12	WEBS	8	2	16'-5 7/8"	32'-11 5/8"	13'-6"	13'-9 7/8"
8S02p	13	WEBS	8	2	16'-5 1/8"	32'-10 3/8"	13'-5 3/8"	13'-9 1/4"
8S02q	14	WEBS	8	2	16'-4 1/2"	32'-9"	13'-4 3/4"	13'-8 1/2"
8S02r	15	WEBS	8	2	16'-3 7/8"	32'-7 3/4"	13'-4 1/8"	13'-7 7/8"
8S02s	16	WEBS	8	2	16'-3 1/4"	32'-6 3/8"	13'-3 1/2"	13'-7 1/4"
8S02t	17	WEBS	8	2	16'-2 1/2"	32'-5 1/8"	13'-2 7/8"	13'-6 1/2"
8S02u	18	WEBS	8	2	16'-1 7/8"	32'-3 3/4"	13'-2 1/8"	13'-5 7/8"
8S02v	19	WEBS	8	2	16'-1 1/4"	32'-2 1/2"	13'-1 1/2"	13'-5 1/4"
8S02w	20	WEBS	8	2	16'-0 5/8"	32'-1 1/8"	13'-0 7/8"	13'-4 5/8"



LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 5 — BAR SIZE



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 4M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	10,189
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	65.8
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-4M, S2-4M, N3-4M AND S3-4M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

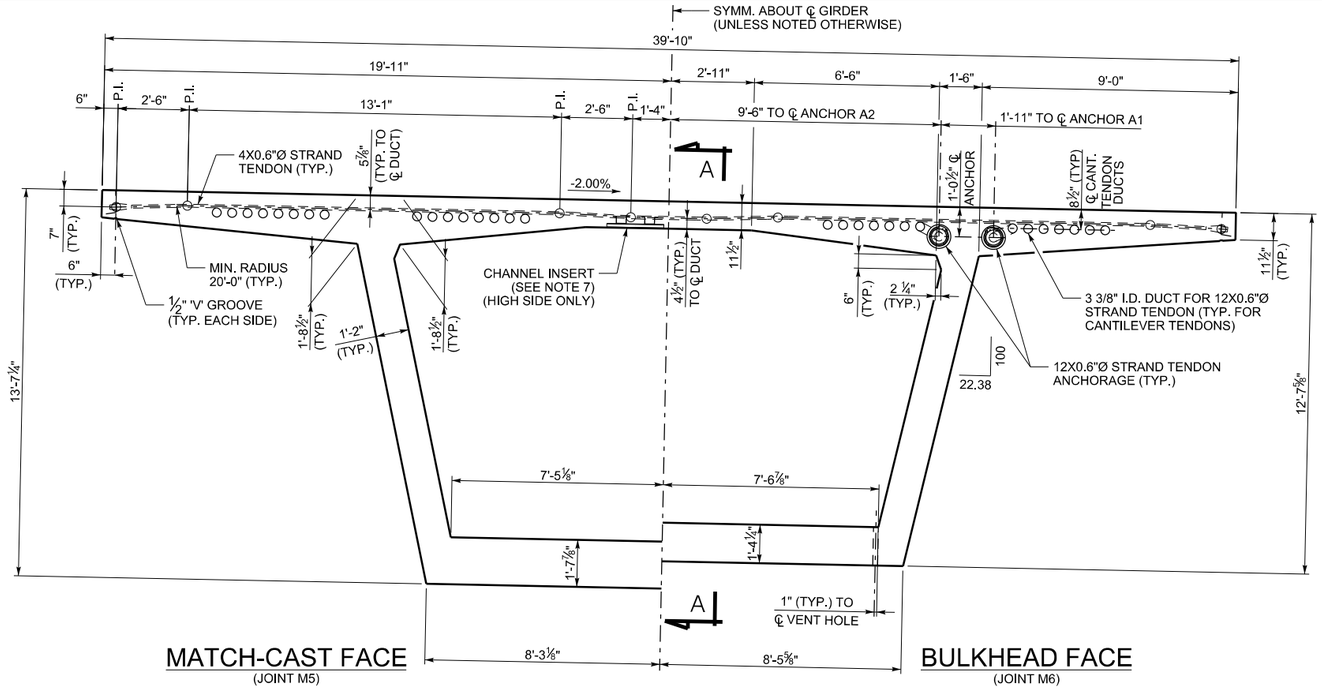
US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 4M REINFORCING II
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

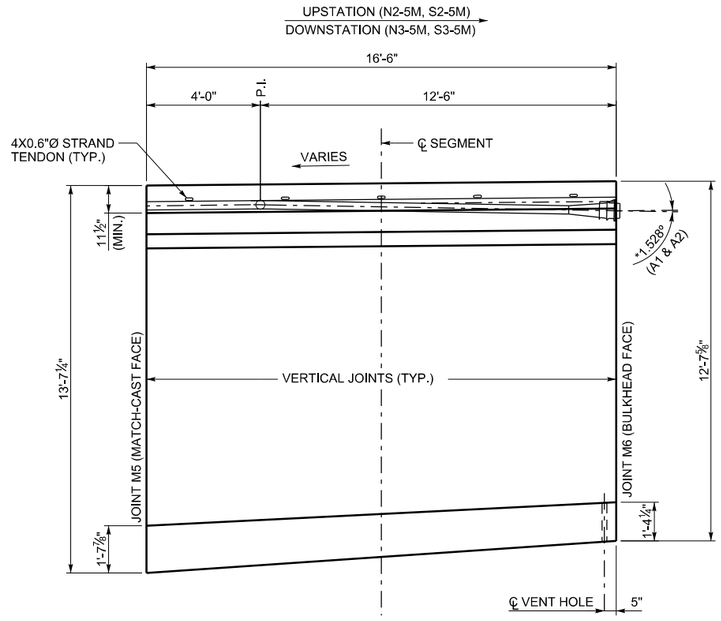
F-763
DRG. NO.

SHT. 159 OF 190

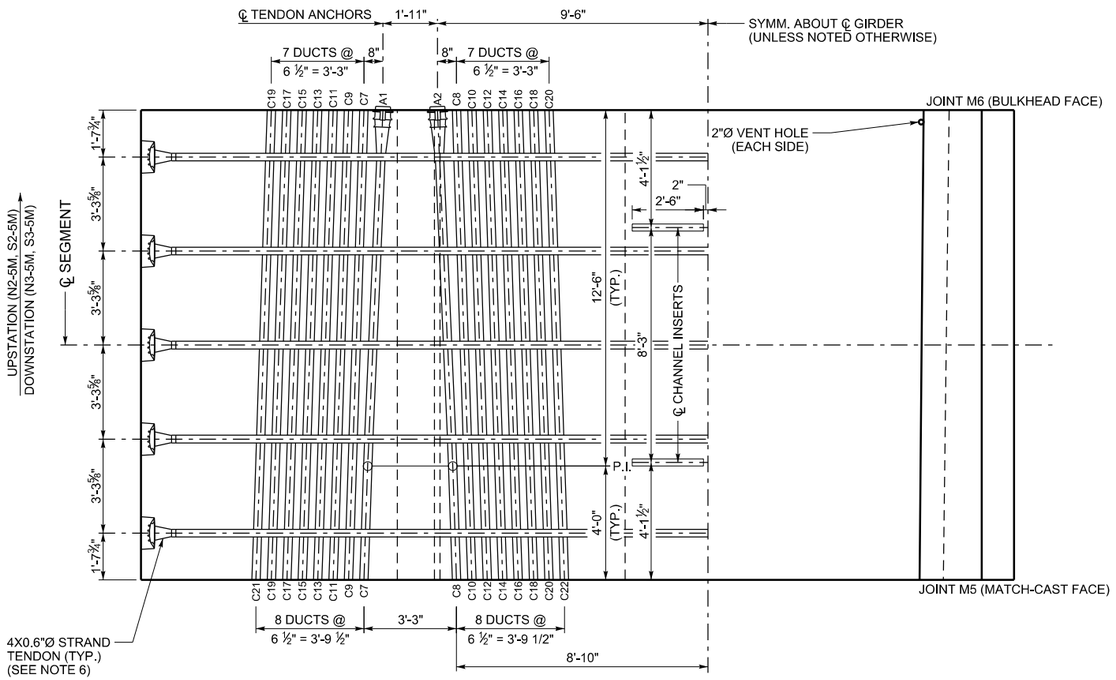
8/6/2008 G:\Projects\Moab\5365.08\Sheet Files\Structure\5365_F-763 159_4M_REINF_2.dgn



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)

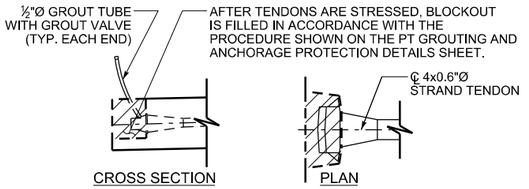


SECTION A-A
(ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB

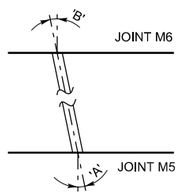
PARTIAL PLAN BOTTOM SLAB



TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
  B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M5 DUCT POSITION	'A'	JOINT M6 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 - C22	1.880°	C7 - C20	1.880°

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-5M, S2-5M, N3-5M AND S3-5M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 02/08 | CHECK DSL 08/08
DRAWN SJF 02/08 | CHECK BTL 02/08
QUANT BTL 08/08 | CHECK KRM 08/08

SENIOR DESIGN ENGR. — DATE
APPROVAL RECOMM. — DATE
APPROVED FOR USE BY UDOT — DATE
UDOT BRIDGE ENGR. — DATE

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 5M DIMS & PT DETAILS

PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

F-763 DRG. NO.

SHT. 160 OF 190

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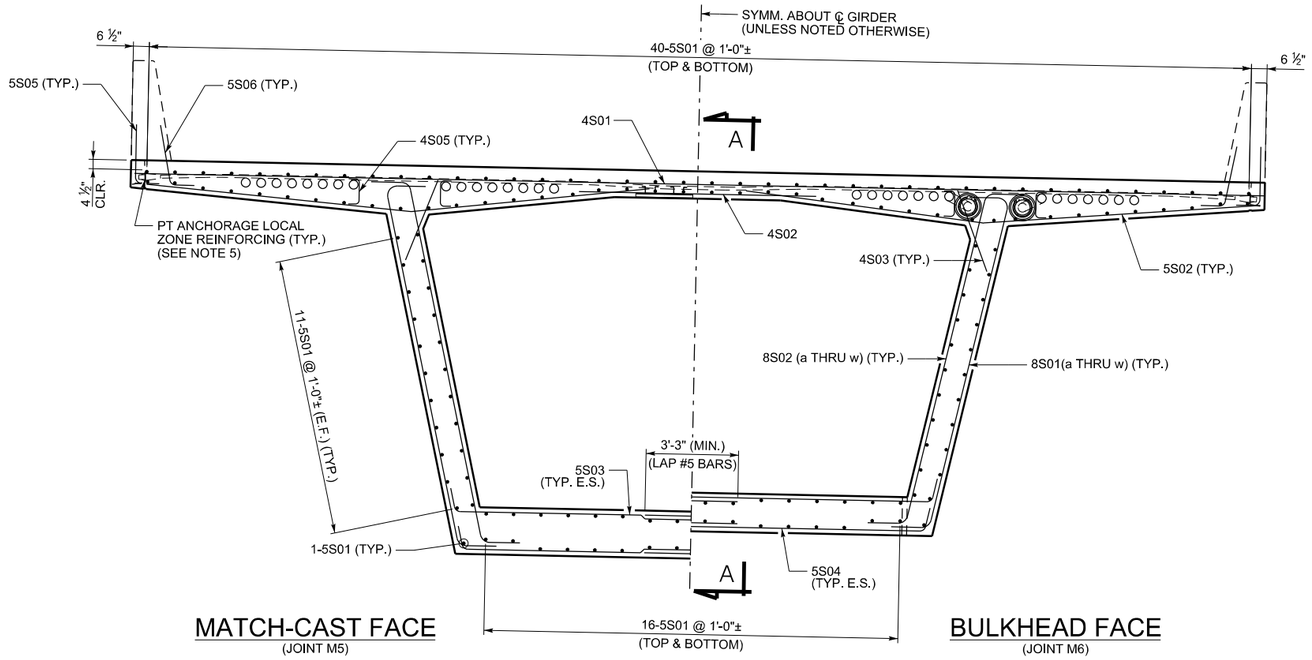
8/6/2008



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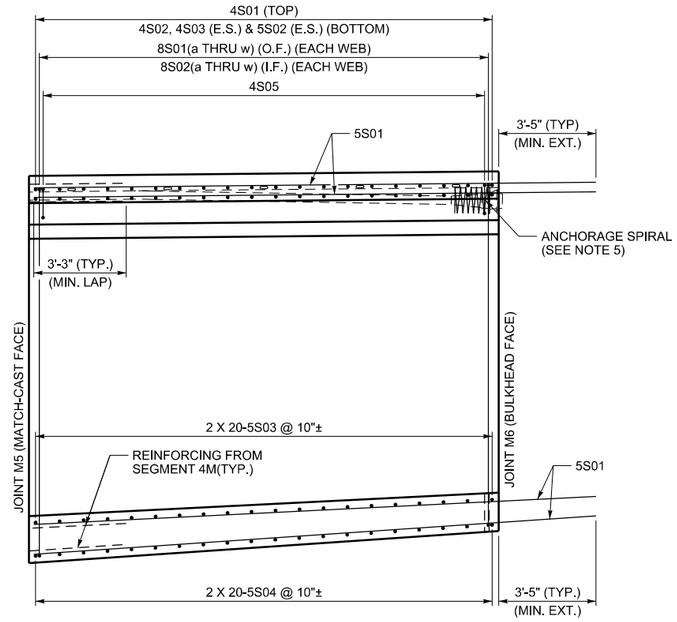
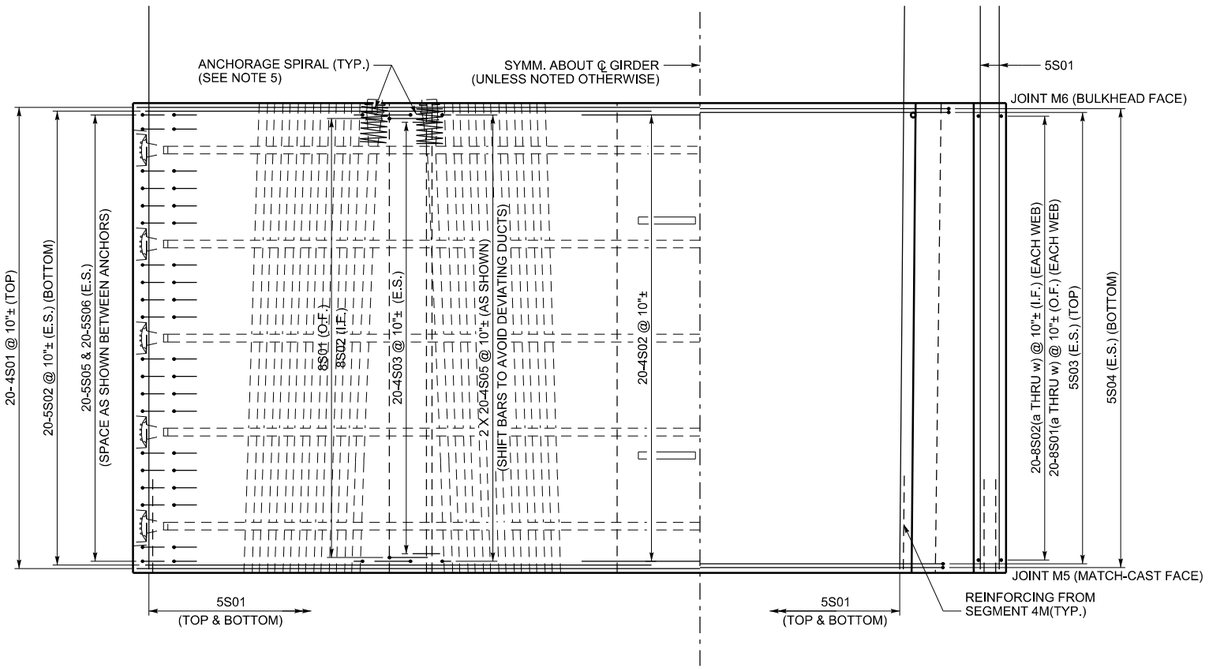


SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-5M, S2-5M, N3-5M AND S3-5M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 5M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 161 OF 190

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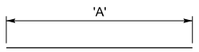
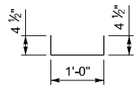
8/6/2008

SEGMENT TYPE 5M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-5M, S2-5M, N3-5M AND S3-5M.

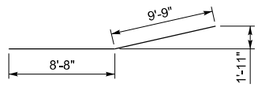
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"	791'-8"	39'-7"
4S02	TOP SLAB	4	20	8'-8"	173'-4 1/8"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	158	19'-9 1/2"	3127'-1"	19'-9 1/2"



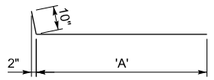
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



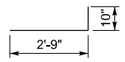
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



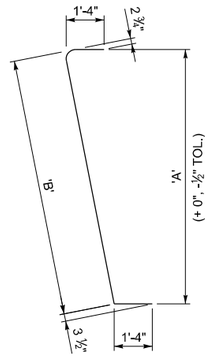
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40	11'-0 7/8"	442'-11"	10'-2 7/8"
5S04	BOTTOM SLAB	5	40	10'-10"	433'-4"	10'-0"
5S06	TOP SLAB	5	40	3'-7"	143'-4"	2'-9"



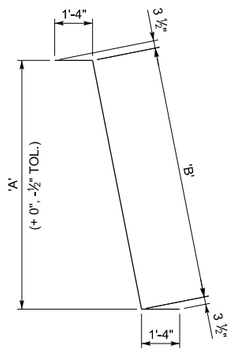
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2	15'-11 1/8"	31'-10 3/8"	13'-0 1/4"	13'-3 1/8"
8S01b	2	WEBS	8	2	15'-10 5/8"	31'-9 1/8"	12'-11 3/4"	13'-2 5/8"
8S01c	3	WEBS	8	2	15'-10"	31'-8"	12'-11 1/8"	13'-2"
8S01d	4	WEBS	8	2	15'-9 3/8"	31'-6 3/4"	12'-10 1/2"	13'-1 3/8"
8S01e	5	WEBS	8	2	15'-8 3/4"	31'-5 5/8"	12'-10"	13'-0 3/4"
8S01f	6	WEBS	8	2	15'-8 1/4"	31'-4 3/8"	12'-9 3/8"	13'-0 1/4"
8S01g	7	WEBS	8	2	15'-7 5/8"	31'-3 1/4"	12'-8 7/8"	12'-11 5/8"
8S01h	8	WEBS	8	2	15'-7"	31'-2 1/8"	12'-8 1/4"	12'-11"
8S01j	9	WEBS	8	2	15'-6 1/2"	31'-0 7/8"	12'-7 5/8"	12'-10 1/2"
8S01k	10	WEBS	8	2	15'-5 7/8"	30'-11 3/4"	12'-7 1/8"	12'-9 7/8"
8S01m	11	WEBS	8	2	15'-5 1/4"	30'-10 1/2"	12'-6 1/2"	12'-9 1/4"
8S01n	12	WEBS	8	2	15'-4 5/8"	30'-9 3/8"	12'-6"	12'-8 5/8"
8S01p	13	WEBS	8	2	15'-4 1/8"	30'-8 1/8"	12'-5 3/8"	12'-8 1/8"
8S01q	14	WEBS	8	2	15'-3 1/2"	30'-7"	12'-4 3/4"	12'-7 1/2"
8S01r	15	WEBS	8	2	15'-2 7/8"	30'-5 3/4"	12'-4 1/4"	12'-6 7/8"
8S01s	16	WEBS	8	2	15'-2 1/4"	30'-4 5/8"	12'-3 5/8"	12'-6 3/8"
8S01t	17	WEBS	8	2	15'-1 3/4"	30'-3 1/2"	12'-3 1/8"	12'-5 3/4"
8S01u	18	WEBS	8	2	15'-1 1/8"	30'-2 1/4"	12'-2 1/2"	12'-5 1/8"
8S01v	19	WEBS	8	2	15'-0 1/2"	30'-1 1/8"	12'-1 7/8"	12'-4 1/2"
8S01w	20	WEBS	8	2	15'-0"	30'-0"	12'-1 3/8"	12'-4"

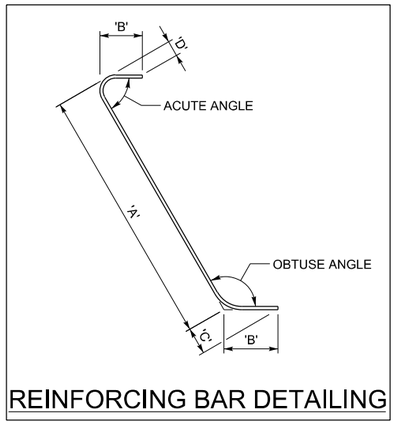


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2	16'-0"	32'-0"	13'-0 1/4"	13'-4"
8S02b	2	WEBS	8	2	15'-11 3/8"	31'-10 3/4"	12'-11 3/4"	13'-3 3/8"
8S02c	3	WEBS	8	2	15'-10 3/4"	31'-9 1/2"	12'-11 1/8"	13'-2 3/4"
8S02d	4	WEBS	8	2	15'-10 1/8"	31'-8 3/8"	12'-10 1/2"	13'-2 1/4"
8S02e	5	WEBS	8	2	15'-9 5/8"	31'-7 1/4"	12'-10"	13'-1 5/8"
8S02f	6	WEBS	8	2	15'-9"	31'-6"	12'-9 3/8"	13'-1"
8S02g	7	WEBS	8	2	15'-8 3/8"	31'-4 7/8"	12'-8 7/8"	13'-0 3/8"
8S02h	8	WEBS	8	2	15'-7 7/8"	31'-3 5/8"	12'-8 1/4"	12'-11 7/8"
8S02j	9	WEBS	8	2	15'-7 1/4"	31'-2 1/2"	12'-7 5/8"	12'-11 1/4"
8S02k	10	WEBS	8	2	15'-6 5/8"	31'-1 1/4"	12'-7 1/8"	12'-10 5/8"
8S02m	11	WEBS	8	2	15'-6"	31'-0 1/8"	12'-6 1/2"	12'-10"
8S02n	12	WEBS	8	2	15'-5 1/2"	30'-10 7/8"	12'-6"	12'-9 1/2"
8S02p	13	WEBS	8	2	15'-4 7/8"	30'-9 3/4"	12'-5 3/8"	12'-8 7/8"
8S02q	14	WEBS	8	2	15'-4 1/4"	30'-8 5/8"	12'-4 3/4"	12'-8 1/4"
8S02r	15	WEBS	8	2	15'-3 3/4"	30'-7 3/8"	12'-4 1/4"	12'-7 3/4"
8S02s	16	WEBS	8	2	15'-3 1/8"	30'-6 1/4"	12'-3 5/8"	12'-7 1/8"
8S02t	17	WEBS	8	2	15'-2 1/2"	30'-5"	12'-3 1/8"	12'-6 1/2"
8S02u	18	WEBS	8	2	15'-1 7/8"	30'-3 7/8"	12'-2 1/2"	12'-5 7/8"
8S02v	19	WEBS	8	2	15'-1 3/8"	30'-2 5/8"	12'-1 7/8"	12'-5 3/8"
8S02w	20	WEBS	8	2	15'-0 3/4"	30'-1 1/2"	12'-1 3/8"	12'-4 3/4"



LEGEND

5 S 01
- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 5 — BAR SIZE



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 5M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	9,364
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	62.0
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-5M, S2-5M, N3-5M AND S3-5M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 5M REINFORCING II
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 162 OF 190

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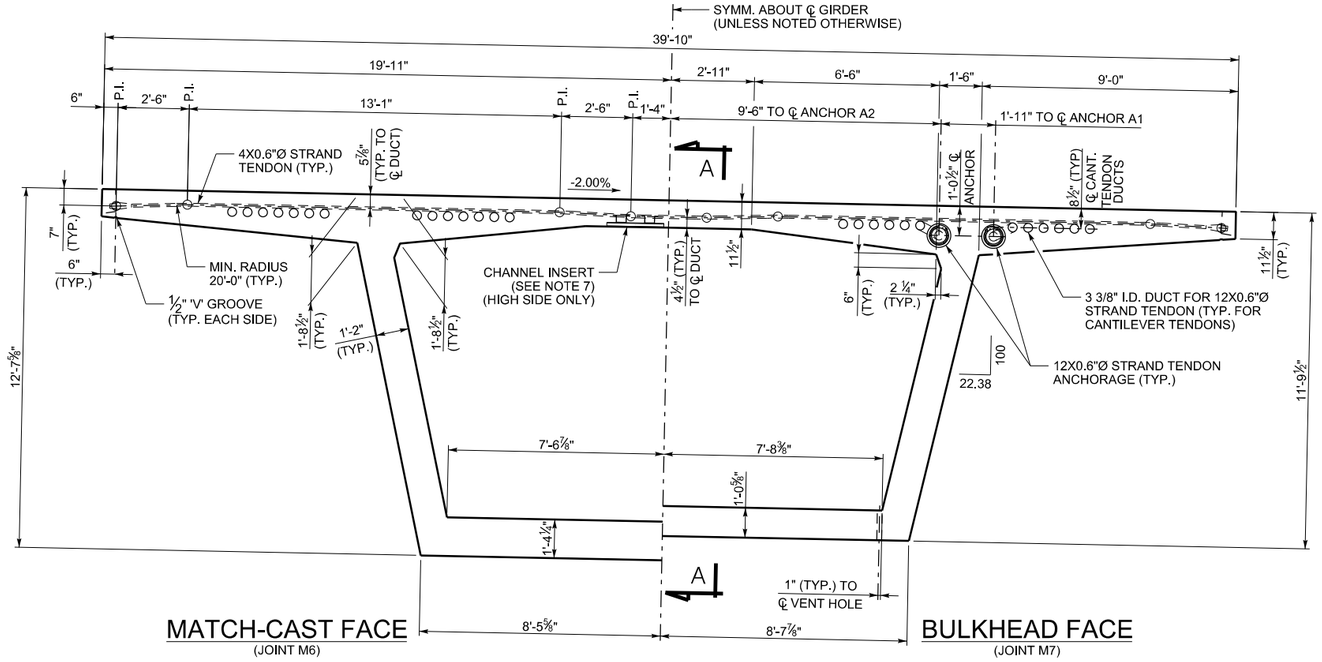
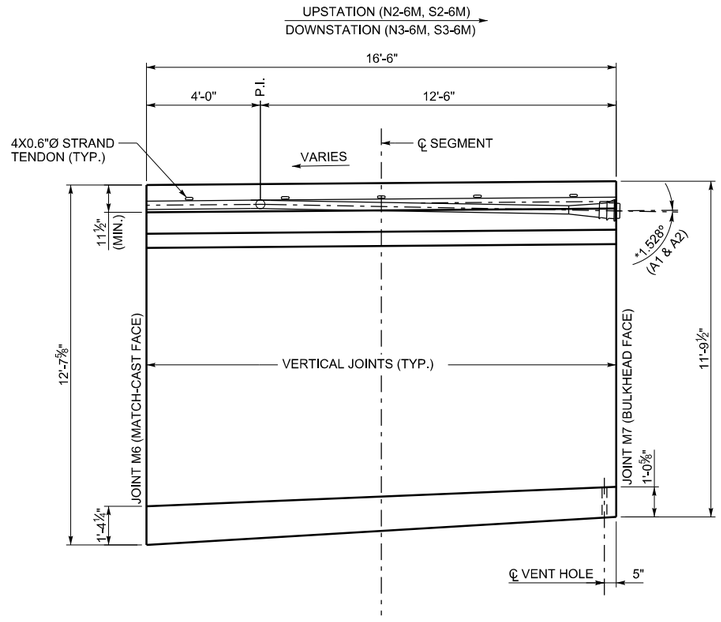
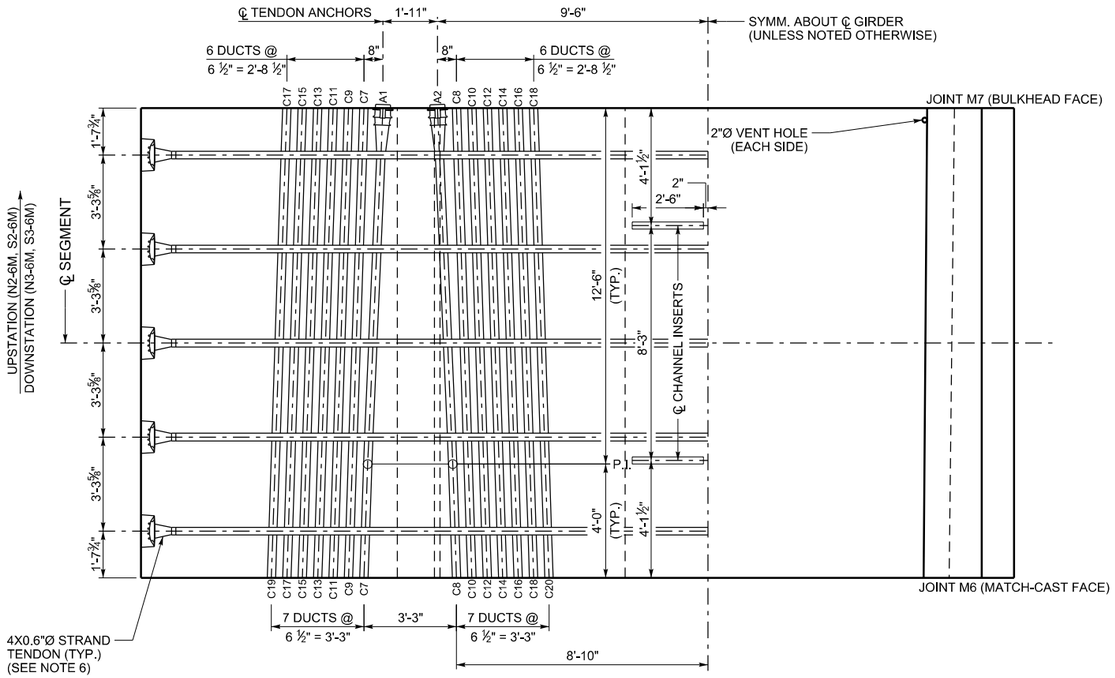
8/6/2008



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)

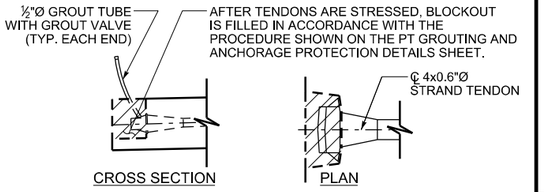


SECTION A-A
(ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)

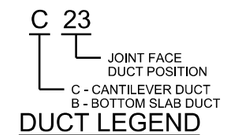


PARTIAL PLAN TOP SLAB

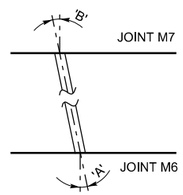
PARTIAL PLAN BOTTOM SLAB



TRANSVERSE TENDON BLOCKOUT DETAIL



DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M6 DUCT POSITION	'A'	JOINT M7 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 -C20	1.880°	C7 - C18	1.880°

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-6M, S2-6M, N3-6M AND S3-6M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

NO.	DATE	BY	REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 6M DIMS & PT DETAILS

PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

F-763 DRG. NO.

SHT. 163 OF 190

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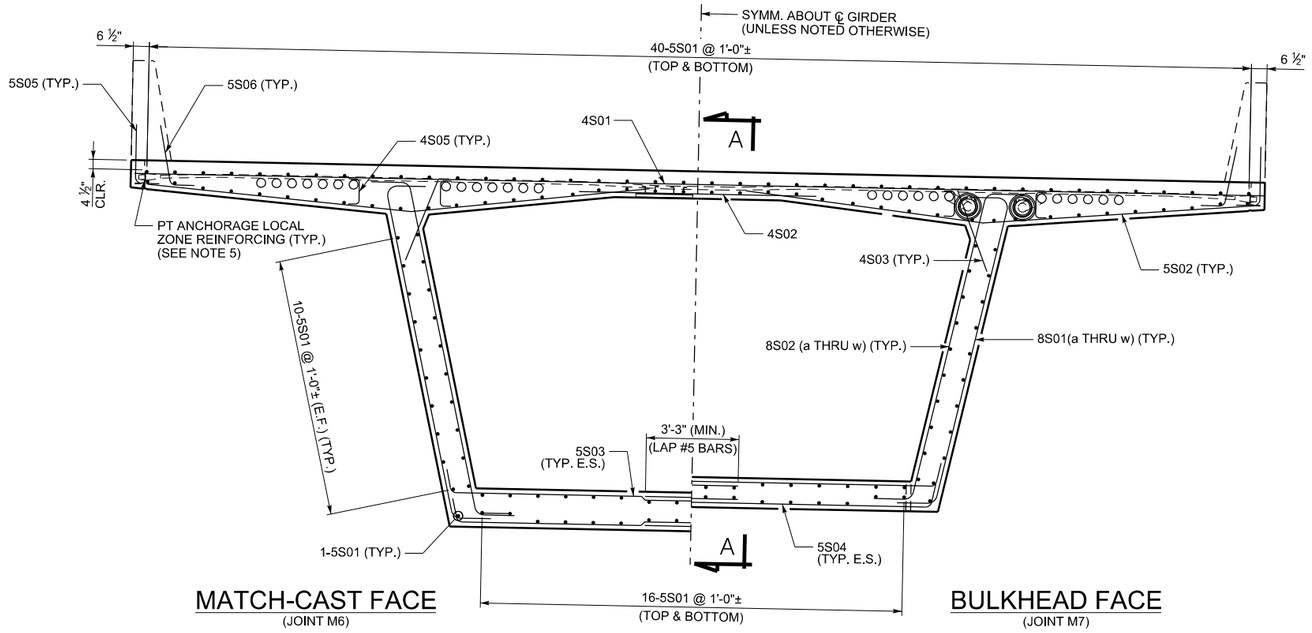
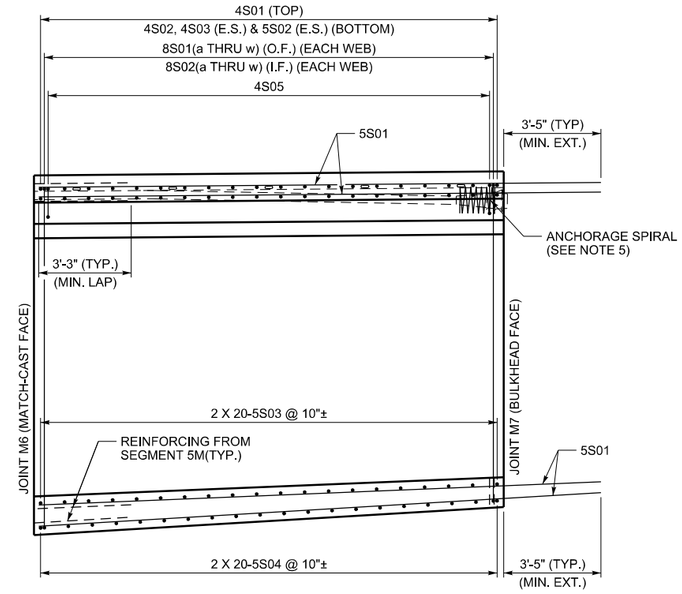
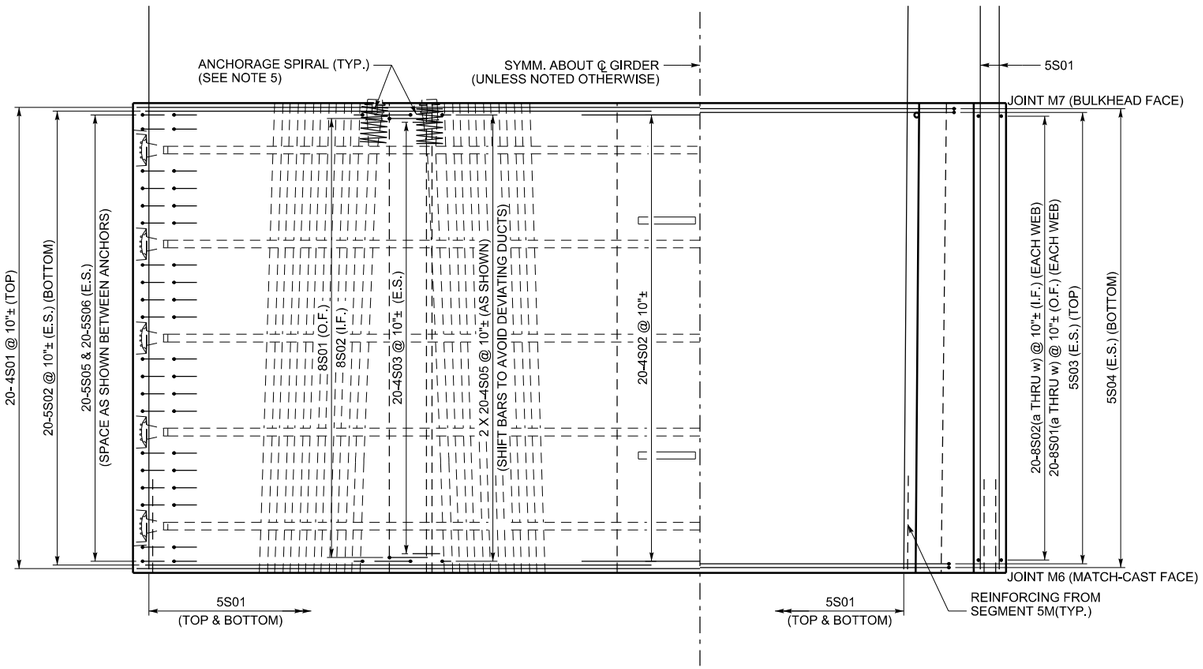
8/6/2008



CROSS SECTION



SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-6M, S2-6M, N3-6M AND S3-6M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 6M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 164 OF 190

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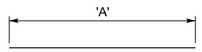
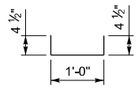
8/6/2008

SEGMENT TYPE 6M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-6M, S2-6M, N3-6M AND S3-6M.

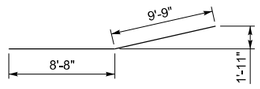
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"	791'-8"	39'-7"
4S02	TOP SLAB	4	20	8'-8"	173'-4"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	154	19'-9 1/2"	3047'-11"	19'-9 1/2"



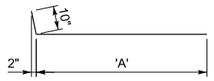
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



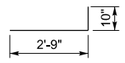
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



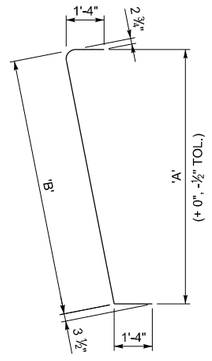
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40	11'-2 3/8"	447'-11"	10'-4 3/8"
5S04	BOTTOM SLAB	5	40	11'-0 1/4"	440'-10"	10'-2 1/4"
5S06	TOP SLAB	5	40	3'-7"	143'-4"	2'-9"



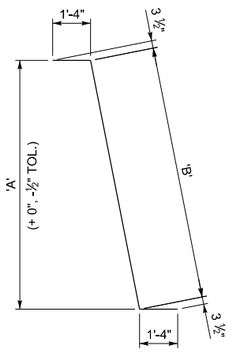
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2	14'-11 3/8"	29'-10 3/4"	12'-0 3/4"	12'-3 3/8"
8S01b	2	WEBS	8	2	14'-10 7/8"	29'-9 3/4"	12'-0 1/4"	12'-2 7/8"
8S01c	3	WEBS	8	2	14'-10 3/8"	29'-8 3/4"	11'-11 3/4"	12'-2 3/8"
8S01d	4	WEBS	8	2	14'-9 7/8"	29'-7 5/8"	11'-11 1/4"	12'-1 7/8"
8S01e	5	WEBS	8	2	14'-9 1/4"	29'-6 5/8"	11'-10 3/4"	12'-1 1/4"
8S01f	6	WEBS	8	2	14'-8 3/4"	29'-5 1/2"	11'-10 1/4"	12'-0 3/4"
8S01g	7	WEBS	8	2	14'-8 1/4"	29'-4 1/2"	11'-9 3/4"	12'-0 1/4"
8S01h	8	WEBS	8	2	14'-7 3/4"	29'-3 1/2"	11'-9 1/4"	11'-11 3/4"
8S01j	9	WEBS	8	2	14'-7 1/4"	29'-2 3/8"	11'-8 3/4"	11'-11 1/4"
8S01k	10	WEBS	8	2	14'-6 3/4"	29'-1 3/8"	11'-8 1/4"	11'-10 3/4"
8S01m	11	WEBS	8	2	14'-6 1/8"	29'-0 3/8"	11'-7 3/4"	11'-10 1/8"
8S01n	12	WEBS	8	2	14'-5 5/8"	28'-11 1/4"	11'-7 1/4"	11'-9 5/8"
8S01p	13	WEBS	8	2	14'-5 1/8"	28'-10 1/4"	11'-6 5/8"	11'-9 1/8"
8S01q	14	WEBS	8	2	14'-4 5/8"	28'-9 1/4"	11'-6 1/8"	11'-8 5/8"
8S01r	15	WEBS	8	2	14'-4 1/8"	28'-8 1/8"	11'-5 5/8"	11'-8 1/8"
8S01s	16	WEBS	8	2	14'-3 1/2"	28'-7 1/8"	11'-5 1/8"	11'-7 1/2"
8S01t	17	WEBS	8	2	14'-3"	28'-6"	11'-4 5/8"	11'-7"
8S01u	18	WEBS	8	2	14'-2 1/2"	28'-5"	11'-4 1/8"	11'-6 1/2"
8S01v	19	WEBS	8	2	14'-2"	28'-4"	11'-3 5/8"	11'-6"
8S01w	20	WEBS	8	2	14'-1 1/2"	28'-2 7/8"	11'-3 1/8"	11'-5 1/2"



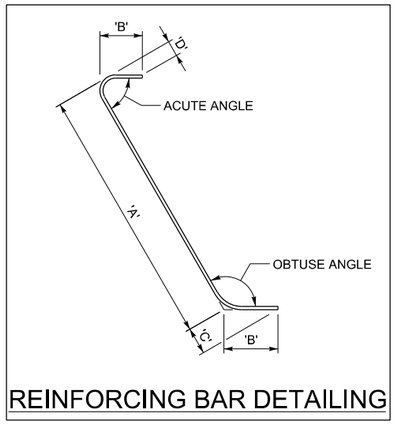
MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2	15'-0 1/8"	30'-0 3/8"	12'-0 3/4"	12'-4 1/4"
8S02b	2	WEBS	8	2	14'-11 5/8"	29'-11 3/8"	12'-0 1/4"	12'-3 5/8"
8S02c	3	WEBS	8	2	14'-11 1/8"	29'-10 1/4"	11'-11 3/4"	12'-3 1/8"
8S02d	4	WEBS	8	2	14'-10 5/8"	29'-9 1/4"	11'-11 1/4"	12'-2 5/8"
8S02e	5	WEBS	8	2	14'-10 1/8"	29'-8 1/4"	11'-10 3/4"	12'-2 1/8"
8S02f	6	WEBS	8	2	14'-9 5/8"	29'-7 1/8"	11'-10 1/4"	12'-1 5/8"
8S02g	7	WEBS	8	2	14'-9"	29'-6 1/8"	11'-9 3/4"	12'-1"
8S02h	8	WEBS	8	2	14'-8 1/2"	29'-5"	11'-9 1/4"	12'-0 1/2"
8S02j	9	WEBS	8	2	14'-8"	29'-4"	11'-8 3/4"	12'-0"
8S02k	10	WEBS	8	2	14'-7 1/2"	29'-3"	11'-8 1/4"	11'-11 1/2"
8S02m	11	WEBS	8	2	14'-7"	29'-1 7/8"	11'-7 3/4"	11'-11"
8S02n	12	WEBS	8	2	14'-6 3/8"	29'-0 7/8"	11'-7 1/4"	11'-10 1/2"
8S02p	13	WEBS	8	2	14'-5 7/8"	28'-11 7/8"	11'-6 5/8"	11'-9 7/8"
8S02q	14	WEBS	8	2	14'-5 3/8"	28'-10 3/4"	11'-6 1/8"	11'-9 3/8"
8S02r	15	WEBS	8	2	14'-4 7/8"	28'-9 3/4"	11'-5 5/8"	11'-8 7/8"
8S02s	16	WEBS	8	2	14'-4 3/8"	28'-8 3/4"	11'-5 1/8"	11'-8 3/8"
8S02t	17	WEBS	8	2	14'-3 7/8"	28'-7 5/8"	11'-4 5/8"	11'-7 7/8"
8S02u	18	WEBS	8	2	14'-3 1/4"	28'-6 5/8"	11'-4 1/8"	11'-7 1/4"
8S02v	19	WEBS	8	2	14'-2 3/4"	28'-5 1/2"	11'-3 5/8"	11'-6 3/4"
8S02w	20	WEBS	8	2	14'-2 1/4"	28'-4 1/2"	11'-3 1/8"	11'-6 1/4"



LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 5 — BAR SIZE



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 6M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	9,097
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	58.3
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-6M, S2-6M, N3-6M AND S3-6M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 6M REINFORCING II

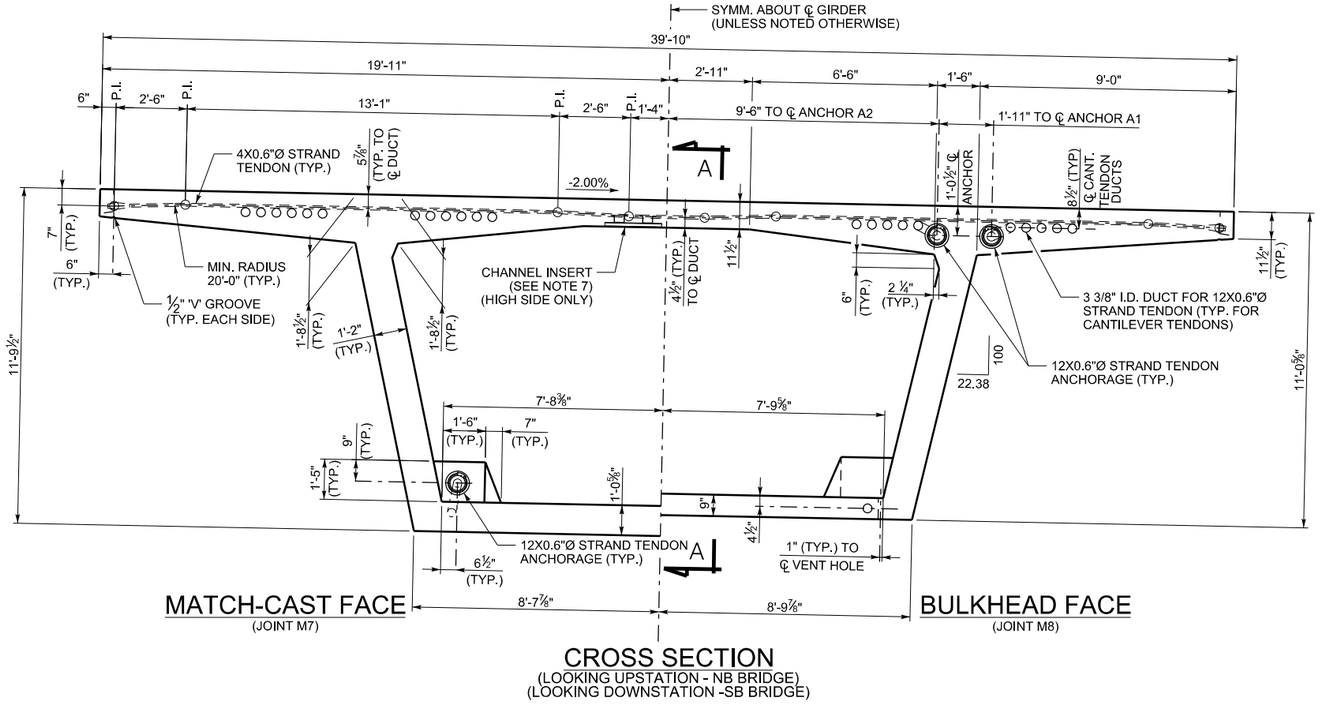
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

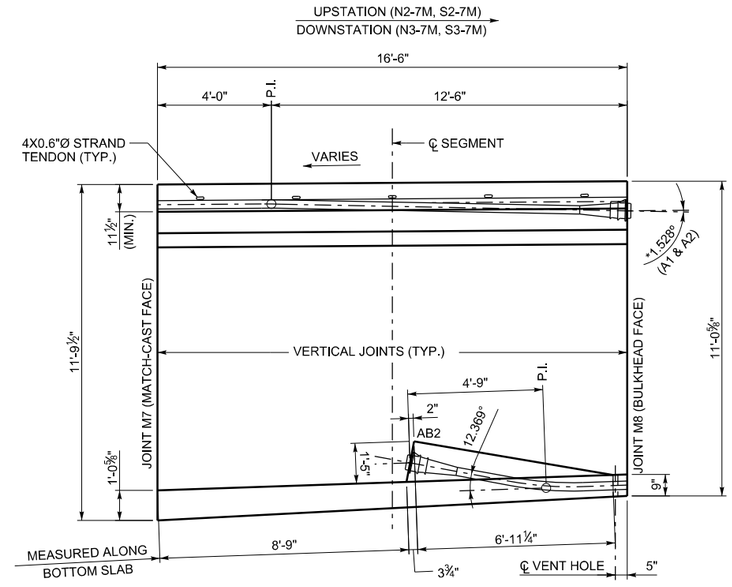
F-763
DRG. NO.

SHT. 165 OF 190

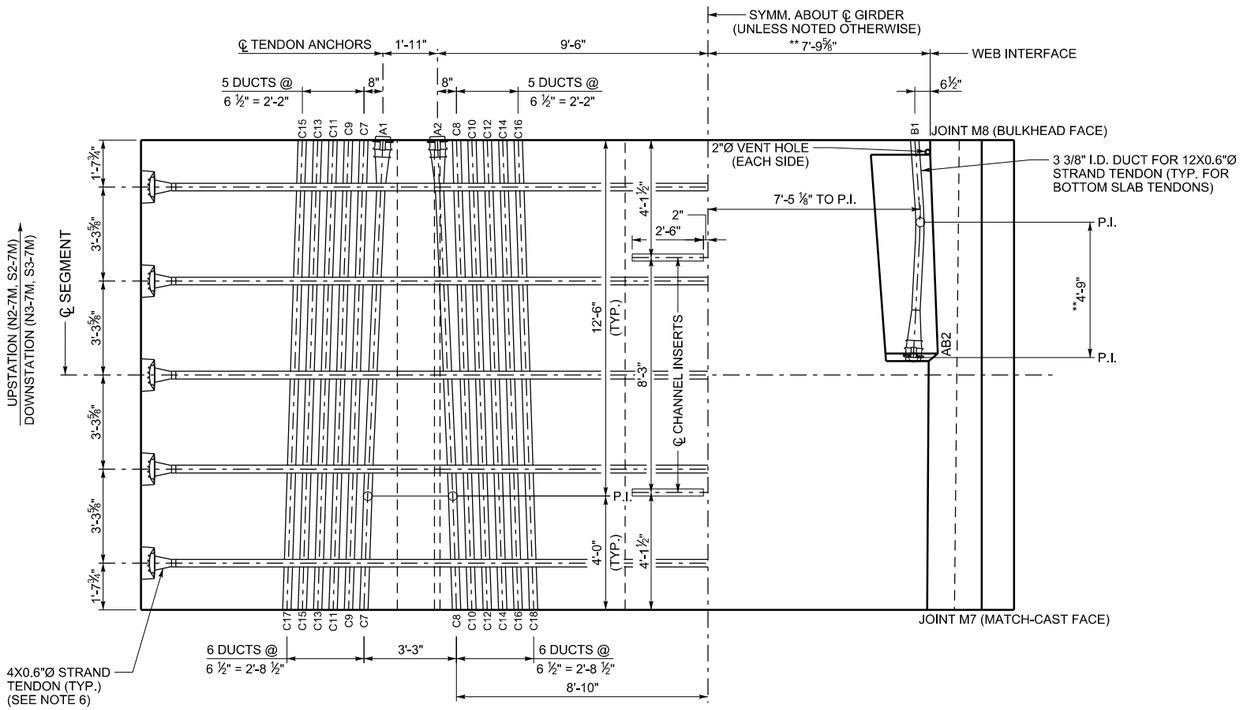
8/6/2008 G:\Projects\Woods\5965.08\Sheet Files\Structures\5965_F-763_165_6M_REINF_2.dgn



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)

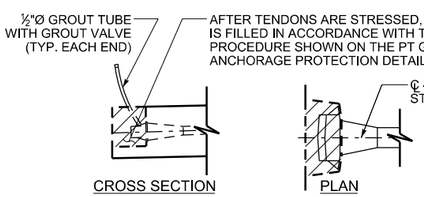


SECTION A-A
(TOP SLAB ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB
(** MEASURED ALONG BOTTOM SLAB)



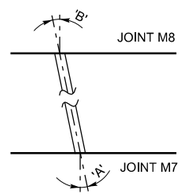
TRANSVERSE TENDON BLOCKOUT DETAIL

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-7M, S2-7M, N3-7M AND S3-7M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
- B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M7 DUCT POSITION	'A'	JOINT M8 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 - C18	1.880°	C7 - C16	1.880°
AB2	2.545°	B1	3.391°

NO.	DATE	BY	REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 7M DIMS & PT DETAILS

PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

F-763 DRG. NO.

SHT. 166 OF 190

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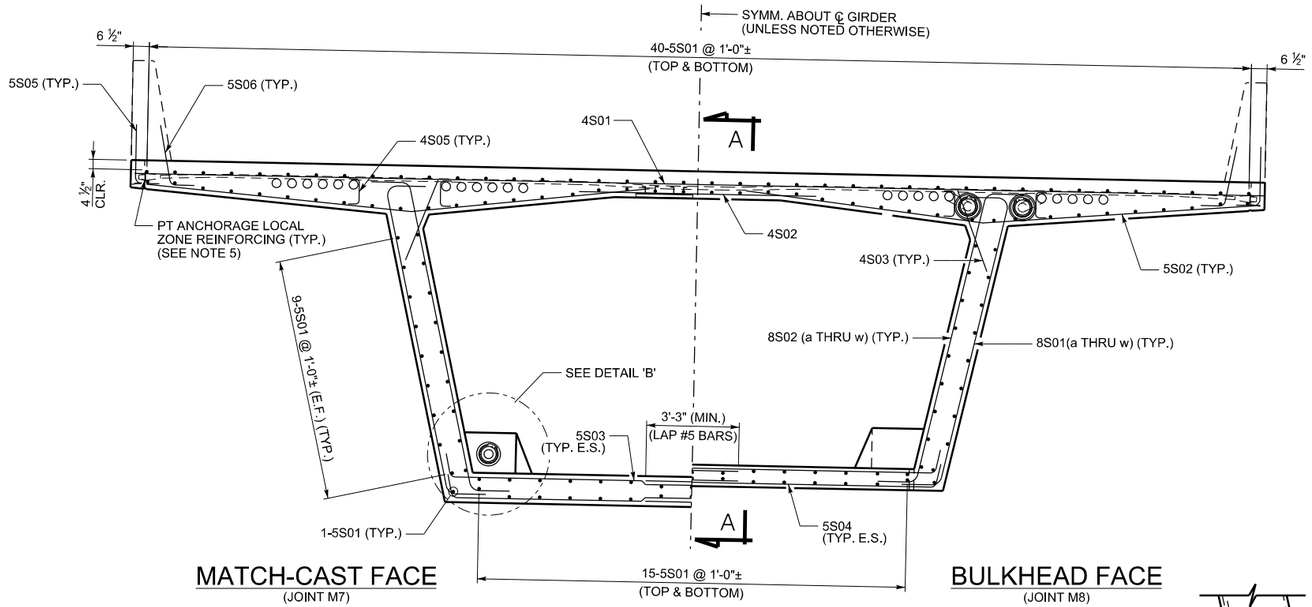
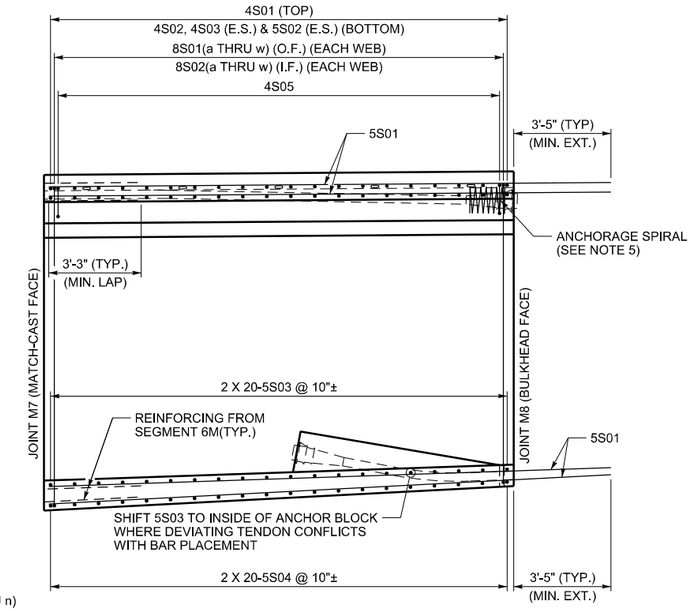
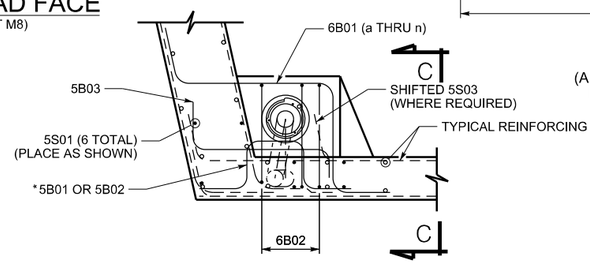
8/6/2008



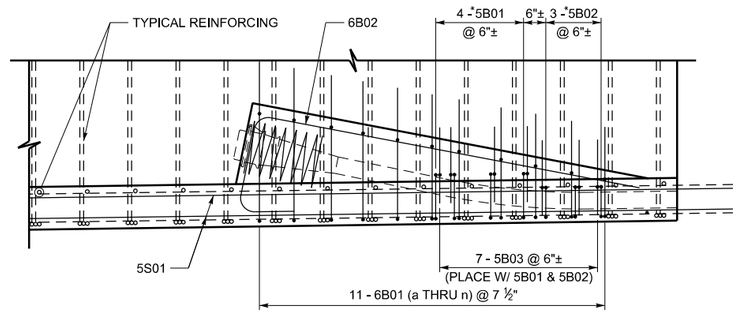
CROSS SECTION
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



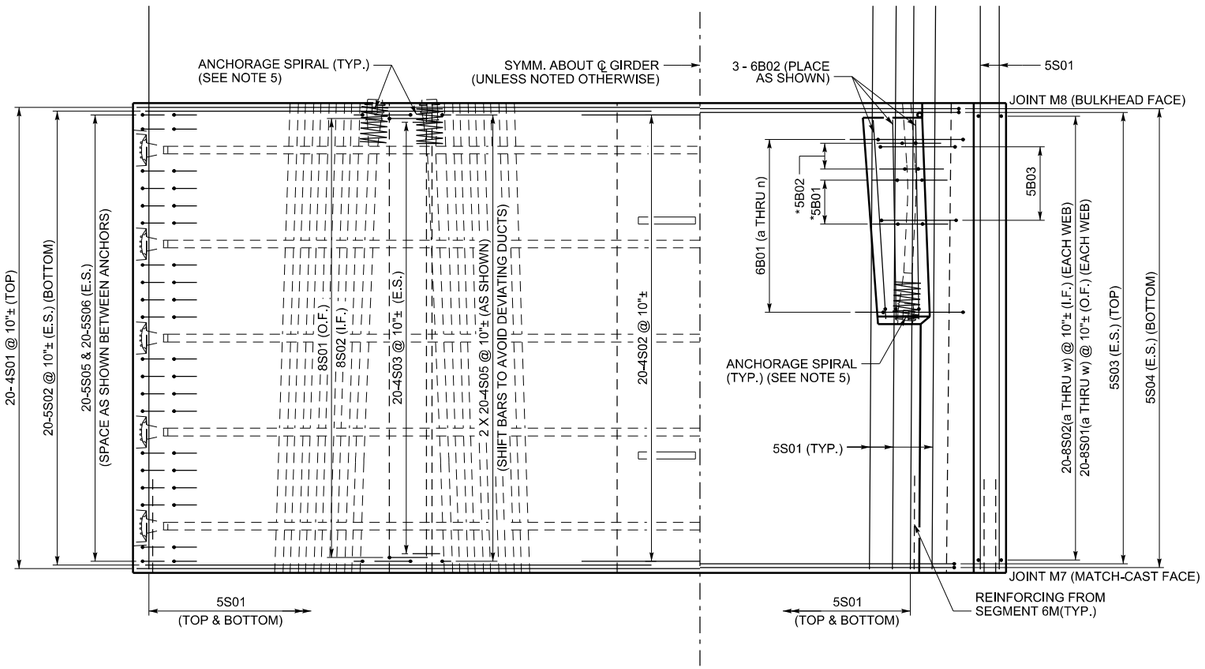
SECTION A-A
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



DETAIL 'B'
(TYPICAL EACH BLOCK)



SECTION C-C
(TYPICAL EACH BLOCK)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-7M, S2-7M, N3-7M AND S3-7M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

* 7. PLACE 5B01 AND 5B02 AROUND CURVED PORTION OF DUCT.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 7M REINFORCING I

PROJECT NUMBER: BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 167 OF 190

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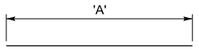
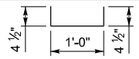
8/6/2008

SEGMENT TYPE 7M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-7M, S2-7M, N3-7M AND S3-7M.

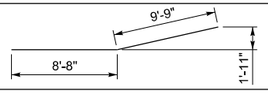
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"	791'-8"	39'-7"
4S02	TOP SLAB	4	20	8'-8"	173'-4"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	162	19'-9 1/2"	3206'-3"	19'-9 1/2"



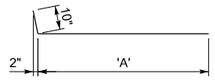
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



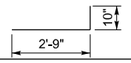
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



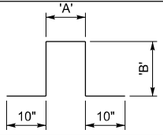
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40	11'-3 1/2"	451'-8"	10'-5 1/2"
5S04	BOTTOM SLAB	5	40	11'-2 1/4"	447'-6"	10'-4 1/4"
5S06	TOP SLAB	5	40	3'-7"	143'-4"	2'-9"



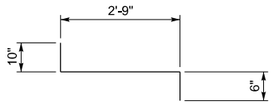
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



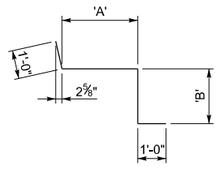
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
5B01	ANCHOR BLOCK	5	8	4'-4"	34'-8"	1'-0"	0'-10"
5B02	ANCHOR BLOCK	5	6	3'-5 ¼"	20'-7 ½"	0'-7 ¼"	0'-7"



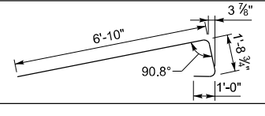
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5B03	ANCHOR BLOCK	5	14	4'-1"	57'-2"



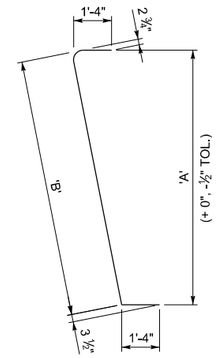
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6B01a	ANCHOR BLOCK	6	2	6'-7 ¾"	13'-3 ½"	2'-9 ½"	1'-10 ⅝"
6B01b	ANCHOR BLOCK	6	2	6'-6 ½"	13'-1"	2'-9 ⅜"	1'-9 ⅛"
6B01c	ANCHOR BLOCK	6	2	6'-5 ¼"	12'-10 ½"	2'-9 ⅜"	1'-7 ⅝"
6B01d	ANCHOR BLOCK	6	2	6'-4"	12'-8"	2'-9 ⅞"	1'-6 ⅛"
6B01e	ANCHOR BLOCK	6	2	6'-2 ⅝"	12'-5 ¼"	2'-10 ⅛"	1'-4 ½"
6B01f	ANCHOR BLOCK	6	2	6'-1 ⅜"	12'-2 ¾"	2'-10 ⅜"	1'-3"
6B01g	ANCHOR BLOCK	6	2	6'-0 ⅛"	12'-0 ¼"	2'-10 ⅝"	1'-1 ½"
6B01h	ANCHOR BLOCK	6	2	5'-11"	11'-10"	2'-11"	1'-0"
6B01k	ANCHOR BLOCK	6	2	5'-9 ⅝"	11'-7 ¼"	2'-11 ¼"	0'-10 ⅜"
6B01m	ANCHOR BLOCK	6	2	5'-8 ⅜"	11'-4 ¾"	2'-11 ½"	0'-8 ⅞"
6B01n	ANCHOR BLOCK	6	2	5'-7 ⅛"	11'-2 ¼"	2'-11 ⅜"	0'-7 ⅜"



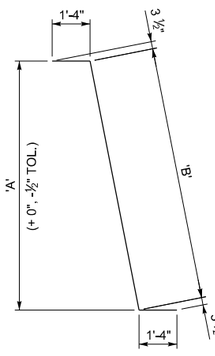
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
6B02	ANCHOR BLOCK	6	6	9'-6 ¾"	57'-4 ½"

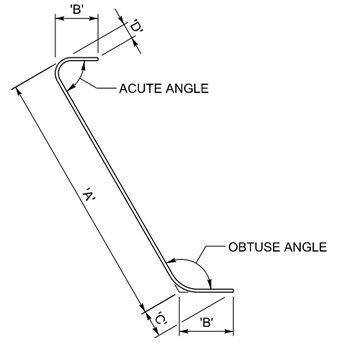


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2	14'-1"	28'-2"	11'-2 5/8"	11'-5"
8S01b	2	WEBS	8	2	14'-0 1/2"	28'-1"	11'-2 1/4"	11'-4 1/2"
8S01c	3	WEBS	8	2	14'-0 1/8"	28'-0 1/8"	11'-1 3/4"	11'-4 1/8"
8S01d	4	WEBS	8	2	13'-11 5/8"	27'-11 1/4"	11'-1 1/4"	11'-3 5/8"
8S01e	5	WEBS	8	2	13'-11 1/8"	27'-10 1/4"	11'-0 7/8"	11'-3 1/8"
8S01f	6	WEBS	8	2	13'-10 3/4"	27'-9 3/8"	11'-0 3/8"	11'-2 3/4"
8S01g	7	WEBS	8	2	13'-10 1/4"	27'-8 1/2"	11'-0"	11'-2 1/4"
8S01h	8	WEBS	8	2	13'-9 3/4"	27'-7 5/8"	10'-11 1/2"	11'-1 3/4"
8S01j	9	WEBS	8	2	13'-9 3/8"	27'-6 5/8"	10'-11 1/8"	11'-1 3/8"
8S01k	10	WEBS	8	2	13'-8 7/8"	27'-5 3/4"	10'-10 5/8"	11'-0 7/8"
8S01m	11	WEBS	8	2	13'-8 3/8"	27'-4 7/8"	10'-10 1/4"	11'-0 3/8"
8S01n	12	WEBS	8	2	13'-8"	27'-4"	10'-9 3/4"	11'-0"
8S01p	13	WEBS	8	2	13'-7 1/2"	27'-3"	10'-9 1/4"	10'-11 1/2"
8S01q	14	WEBS	8	2	13'-7"	27'-2 1/8"	10'-8 7/8"	10'-11 1/8"
8S01r	15	WEBS	8	2	13'-6 5/8"	27'-1 1/4"	10'-8 3/8"	10'-10 5/8"
8S01s	16	WEBS	8	2	13'-6 1/8"	27'-0 1/4"	10'-8"	10'-10 1/8"
8S01t	17	WEBS	8	2	13'-5 3/4"	26'-11 3/8"	10'-7 1/2"	10'-9 3/4"
8S01u	18	WEBS	8	2	13'-5 1/4"	26'-10 1/2"	10'-7 1/8"	10'-9 1/4"
8S01v	19	WEBS	8	2	13'-4 3/4"	26'-9 5/8"	10'-6 5/8"	10'-8 3/4"
8S01w	20	WEBS	8	2	13'-4 3/8"	26'-8 5/8"	10'-6 1/4"	10'-8 3/8"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2	14'-1 3/4"	28'-3 1/2"	11'-2 5/8"	11'-5 3/4"
8S02b	2	WEBS	8	2	14'-1 1/4"	28'-2 5/8"	11'-2 1/4"	11'-5 3/8"
8S02c	3	WEBS	8	2	14'-0 7/8"	28'-1 3/4"	11'-1 3/4"	11'-4 7/8"
8S02d	4	WEBS	8	2	14'-0 3/8"	28'-0 3/4"	11'-1 1/4"	11'-4 3/8"
8S02e	5	WEBS	8	2	14'-0"	28'-0"	11'-0 7/8"	11'-4"
8S02f	6	WEBS	8	2	13'-11 1/2"	27'-11"	11'-0 3/8"	11'-3 1/2"
8S02g	7	WEBS	8	2	13'-11"	27'-10 1/8"	11'-0"	11'-3"
8S02h	8	WEBS	8	2	13'-10 5/8"	27'-9 1/8"	10'-11 1/2"	11'-2 5/8"
8S02j	9	WEBS	8	2	13'-10 1/8"	27'-8 1/4"	10'-11 1/8"	11'-2 1/8"
8S02k	10	WEBS	8	2	13'-9 5/8"	27'-7 3/8"	10'-10 5/8"	11'-1 5/8"
8S02m	11	WEBS	8	2	13'-9 1/4"	27'-6 3/8"	10'-10 1/4"	11'-1 1/4"
8S02n	12	WEBS	8	2	13'-8 3/4"	27'-5 1/2"	10'-9 3/4"	11'-0 3/4"
8S02p	13	WEBS	8	2	13'-8 1/4"	27'-4 5/8"	10'-9 1/4"	11'-0 3/8"
8S02q	14	WEBS	8	2	13'-7 7/8"	27'-3 3/4"	10'-8 7/8"	10'-11 7/8"
8S02r	15	WEBS	8	2	13'-7 3/8"	27'-2 3/4"	10'-8 3/8"	10'-11 3/8"
8S02s	16	WEBS	8	2	13'-7"	27'-1 7/8"	10'-8"	10'-11"
8S02t	17	WEBS	8	2	13'-6 1/2"	27'-1"	10'-7 1/2"	10'-10 1/2"
8S02u	18	WEBS	8	2	13'-6"	27'-0 1/8"	10'-7 1/8"	10'-10"
8S02v	19	WEBS	8	2	13'-5 5/8"	26'-11 1/8"	10'-6 5/8"	10'-9 5/8"
8S02w	20	WEBS	8	2	13'-5 1/8"	26'-10 1/4"	10'-6 1/4"	10'-9 1/8"





REINFORCING BAR DETAILING

LEGEND

5 S 01

- 5 — BAR SIZE
- S — B - ANCHOR BLOCK; D - DEVIATOR; S - SEGMENT
- 01 — BAR NUMBER

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 7M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	9,418
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	55.2
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-7M, S2-7M, N3-7M AND S3-7M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

SENIOR DESIGN ENGR. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVAL RECOMM. — APPROVED FOR USE BY UDOT

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 7M REINFORCING II
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
F-763 DRG. NO.
SHT. 168 OF 190

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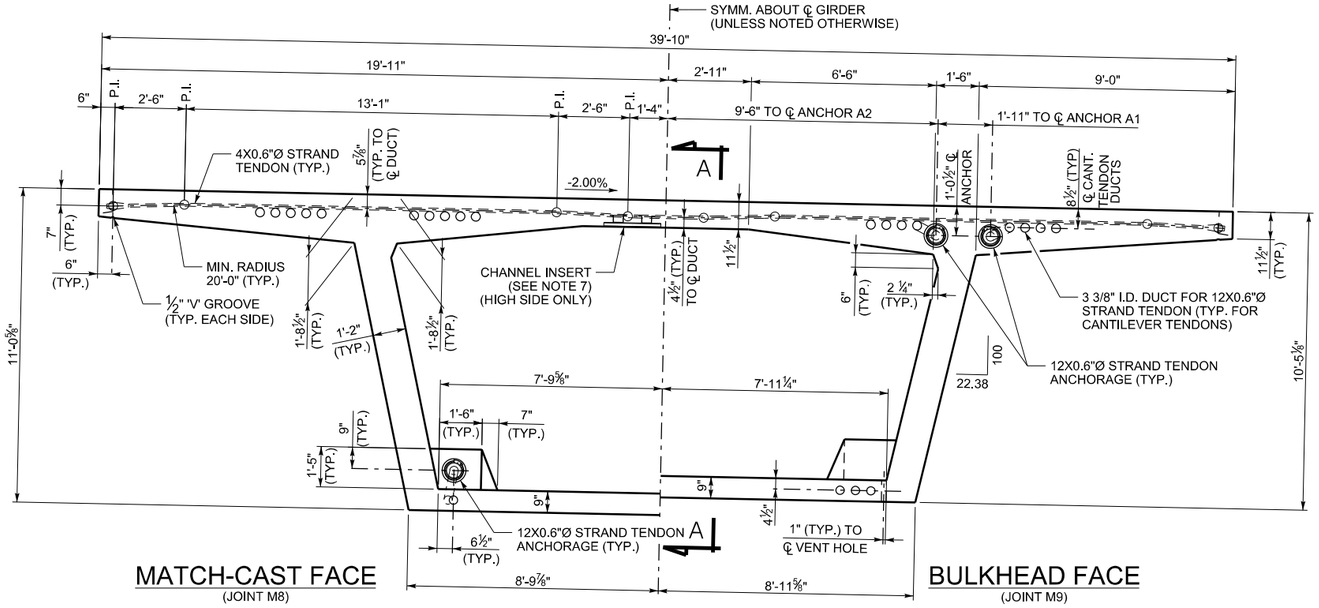
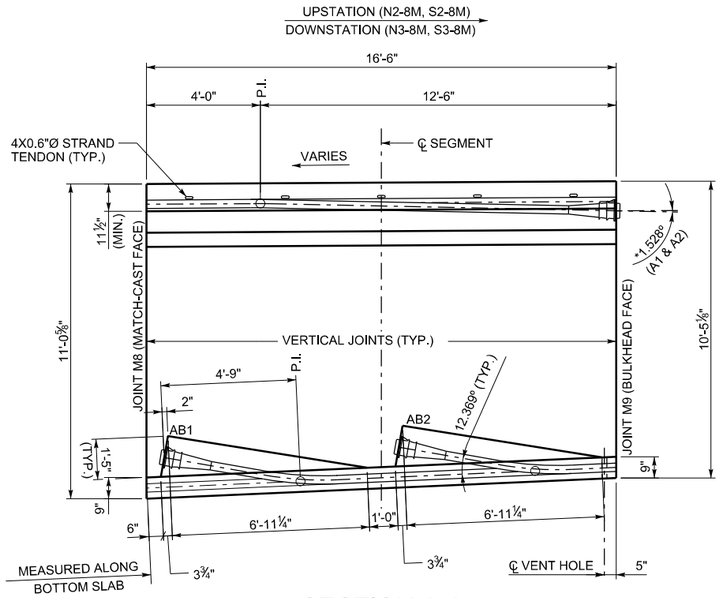
8/6/2008



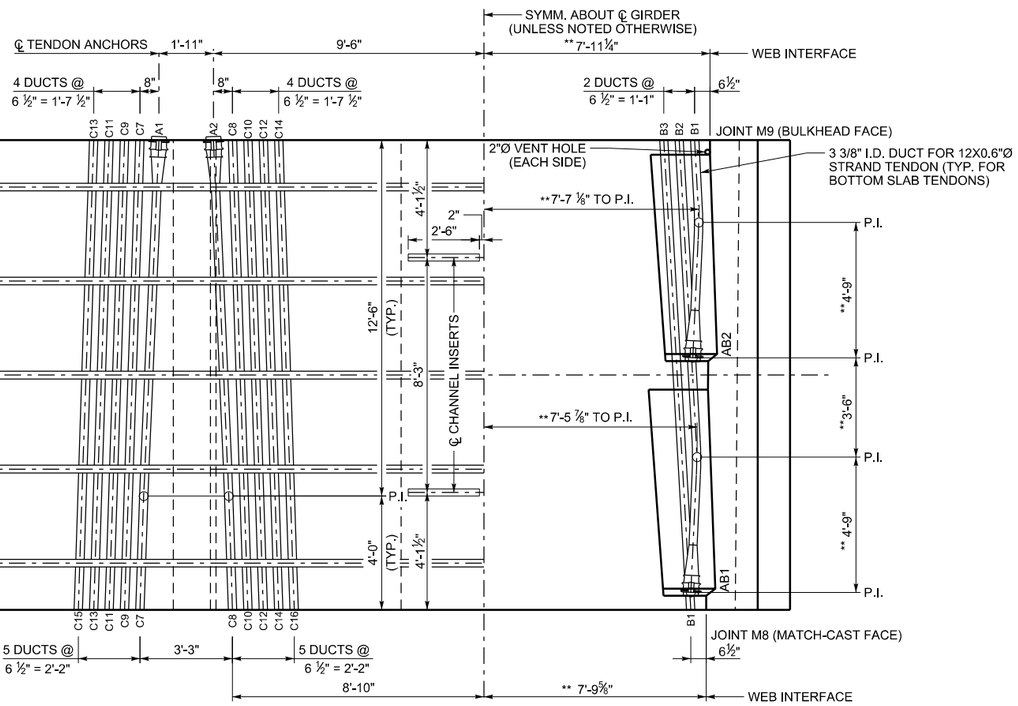
CROSS SECTION

(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)
ANCHOR BLOCK DIMENSIONS TYPICAL
FOR BOTH AB1 AND AB2 BLOCKS)



SECTION A-A

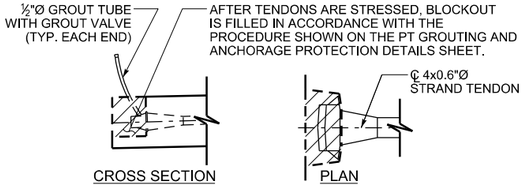
(TOP SLAB ANGLES SHOWN WITH
RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

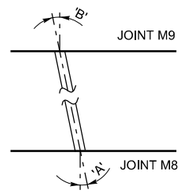
(** MEASURED ALONG BOTTOM SLAB)



TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
  B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M8 DUCT POSITION	'A'	JOINT M9 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 - C16	1.880°	C7 - C14	1.880°
AB1	2.657°	B2	3.236°
AB2	2.657°	B1	3.264°
B1	3.274°	B3	3.274°

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-8M, S2-8M, N3-8M AND S3-8M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER. STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE)
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	SENIOR DESIGN ENGR.
CHECK	BTL	02/08	
CHECK	KRM	08/08	UDOT BRIDGE ENGR.

APPROVAL RECOMM. _____ DATE _____
APPROVED FOR USE BY UDOT _____ DATE _____

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 8M DIMS & PT DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 169 OF 190

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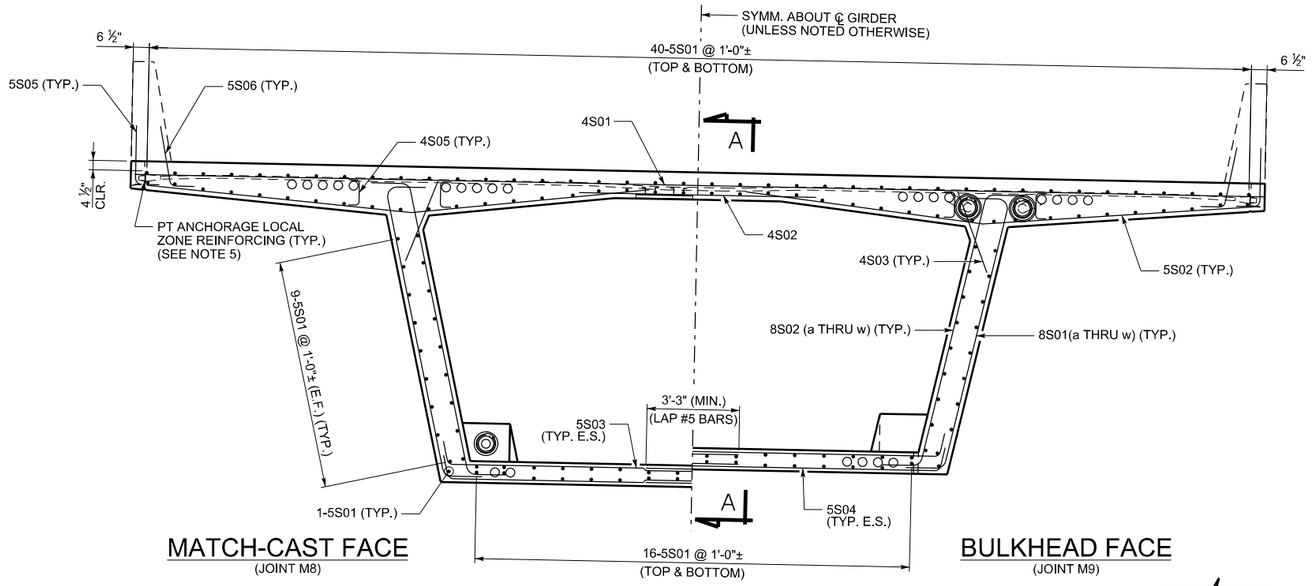
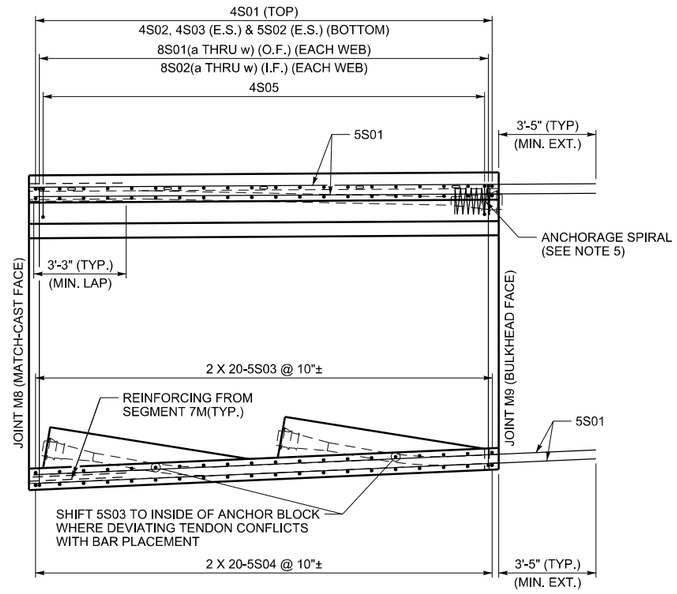
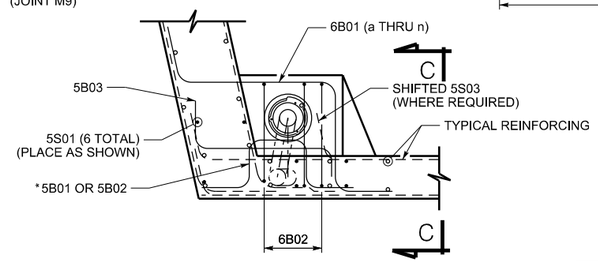
8/6/2008



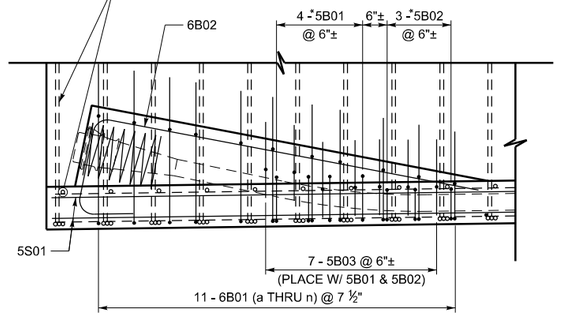
CROSS SECTION
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



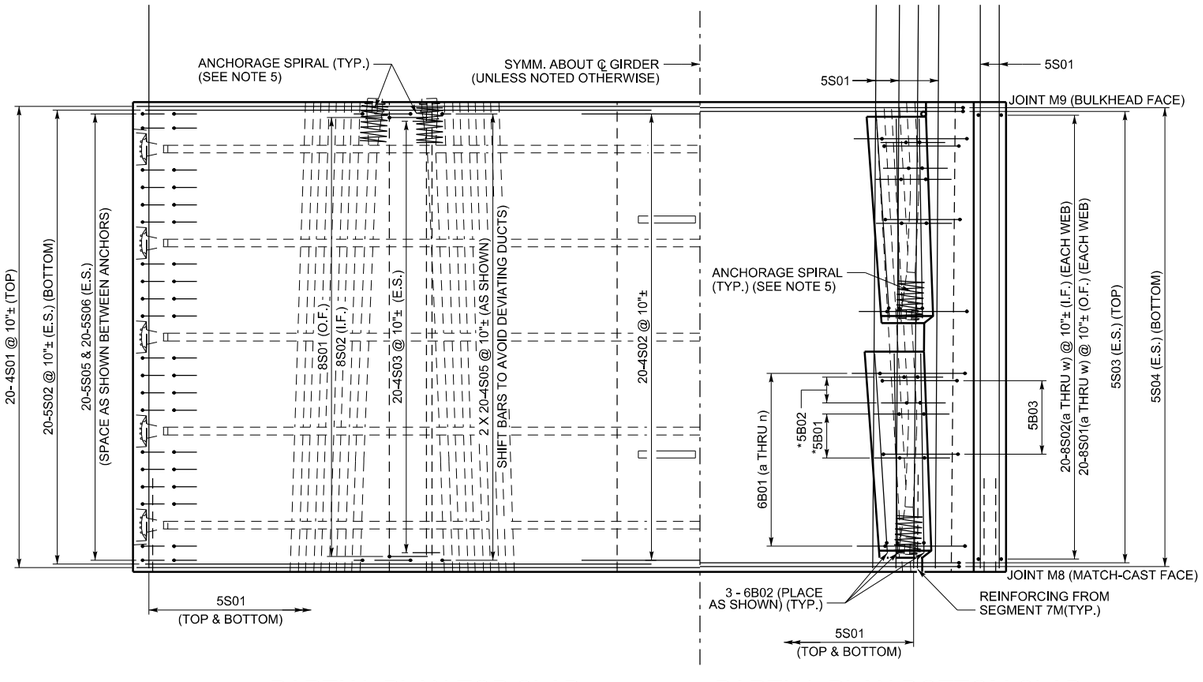
SECTION A-A
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



DETAIL 'B'
(TYPICAL EACH BLOCK)



SECTION C-C
(TYPICAL EACH BLOCK)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-8M, S2-8M, N3-8M AND S3-8M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.
7. * PLACE 5B01 AND 5B02 AROUND CURVED PORTION OF DUCT.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	SENIOR DESIGN ENGR.
CHECK	BTL	02/08	
CHECK	KRM	08/08	UDOT BRIDGE ENGR.

APPROVAL RECOMM. DATE
APPROVED FOR USE BY UDOT DATE

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 8M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 170 OF 190

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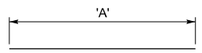
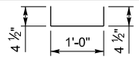
8/6/2008

SEGMENT TYPE 8M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-8M, S2-8M, N3-8M AND S3-8M.

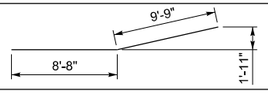
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"	791'-8"	39'-7"
4S02	TOP SLAB	4	20	8'-8"	173'-4"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	162	19'-9 1/2"	3206'-3"	19'-9 1/2"



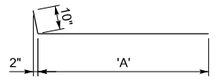
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



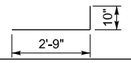
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



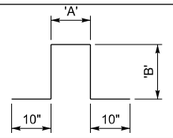
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40	11'-5 1/4"	457'-6"	10'-7 1/4"
5S04	BOTTOM SLAB	5	40	11'-3 7/8"	452'-11"	10'-5 7/8"
5S06	TOP SLAB	5	40	3'-7"	143'-4"	2'-9"



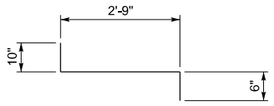
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



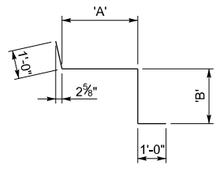
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
5B01	ANCHOR BLOCK	5	16	4'-4"	69'-4"	1'-0"	0'-10"
5B02	ANCHOR BLOCK	5	12	3'-5 ½"	41'-3"	0'-7 ½"	0'-7"



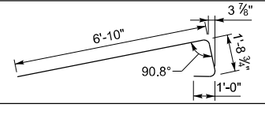
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5B03	ANCHOR BLOCK	5	28	4'-1"	114'-4"



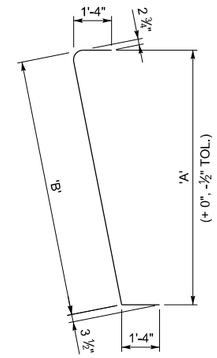
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6B01a	ANCHOR BLOCK	6	4	6'-7 ¾"	26'-7"	2'-9 ½"	1'-10 ⅝"
6B01b	ANCHOR BLOCK	6	4	6'-6 ½"	26'-2"	2'-9 ⅜"	1'-9 ⅛"
6B01c	ANCHOR BLOCK	6	4	6'-5 ¼"	25'-9"	2'-9 ⅛"	1'-7 ⅝"
6B01d	ANCHOR BLOCK	6	4	6'-4"	25'-4"	2'-9 ⅞"	1'-6 ⅛"
6B01e	ANCHOR BLOCK	6	4	6'-2 ⅝"	24'-10 ½"	2'-10 ⅛"	1'-4 ½"
6B01f	ANCHOR BLOCK	6	4	6'-1 ⅜"	24'-5 ½"	2'-10 ⅜"	1'-3"
6B01g	ANCHOR BLOCK	6	4	6'-0 ⅛"	24'-0 ½"	2'-10 ⅝"	1'-1 ½"
6B01h	ANCHOR BLOCK	6	4	5'-11"	23'-8"	2'-11"	1'-0"
6B01k	ANCHOR BLOCK	6	4	5'-9 ⅝"	23'-2 ½"	2'-11 ¼"	0'-10 ⅜"
6B01m	ANCHOR BLOCK	6	4	5'-8 ⅜"	22'-9 ½"	2'-11 ½"	0'-8 ⅞"
6B01n	ANCHOR BLOCK	6	4	5'-7 ⅛"	22'-4 ½"	2'-11 ¾"	0'-7 ⅜"



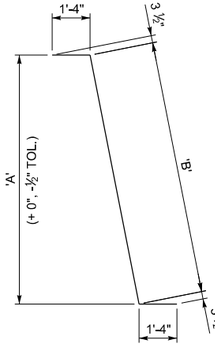
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
6B02	ANCHOR BLOCK	6	12	9'-6 ¾"	114'-9"

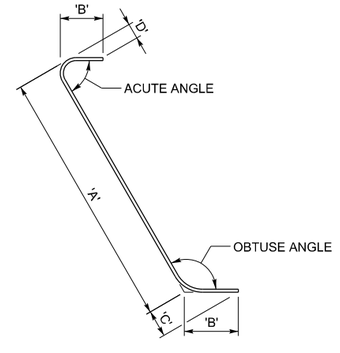


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2	13'-3 7/8"	26'-7 7/8"	10'-5 3/4"	10'-7 7/8"
8S01b	2	WEBS	8	2	13'-3 1/2"	26'-7"	10'-5 3/8"	10'-7 1/2"
8S01c	3	WEBS	8	2	13'-3 1/8"	26'-6 1/4"	10'-5"	10'-7 1/8"
8S01d	4	WEBS	8	2	13'-2 3/4"	26'-5 1/2"	10'-4 5/8"	10'-6 3/4"
8S01e	5	WEBS	8	2	13'-2 3/8"	26'-4 3/4"	10'-4 1/4"	10'-6 3/8"
8S01f	6	WEBS	8	2	13'-2"	26'-4"	10'-3 7/8"	10'-6"
8S01g	7	WEBS	8	2	13'-1 5/8"	26'-3 1/4"	10'-3 1/2"	10'-5 5/8"
8S01h	8	WEBS	8	2	13'-1 1/4"	26'-2 1/2"	10'-3 1/8"	10'-5 1/4"
8S01j	9	WEBS	8	2	13'-0 7/8"	26'-1 3/4"	10'-2 7/8"	10'-4 7/8"
8S01k	10	WEBS	8	2	13'-0 1/2"	26'-1"	10'-2 1/2"	10'-4 1/2"
8S01m	11	WEBS	8	2	13'-0 1/8"	26'-0 1/4"	10'-2 1/8"	10'-4 1/8"
8S01n	12	WEBS	8	2	12'-11 3/4"	25'-11 3/8"	10'-1 3/4"	10'-3 3/4"
8S01p	13	WEBS	8	2	12'-11 3/8"	25'-10 5/8"	10'-1 3/8"	10'-3 3/8"
8S01q	14	WEBS	8	2	12'-11"	25'-9 7/8"	10'-1"	10'-3"
8S01r	15	WEBS	8	2	12'-10 5/8"	25'-9 1/8"	10'-0 5/8"	10'-2 5/8"
8S01s	16	WEBS	8	2	12'-10 1/4"	25'-8 3/8"	10'-0 1/4"	10'-2 1/4"
8S01t	17	WEBS	8	2	12'-9 3/4"	25'-7 5/8"	9'-11 7/8"	10'-1 7/8"
8S01u	18	WEBS	8	2	12'-9 3/8"	25'-6 7/8"	9'-11 1/2"	10'-1 1/2"
8S01v	19	WEBS	8	2	12'-9"	25'-6 1/8"	9'-11 1/8"	10'-1"
8S01w	20	WEBS	8	2	12'-8 5/8"	25'-5 3/8"	9'-10 3/4"	10'-0 5/8"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2	13'-4 3/4"	26'-9 3/8"	10'-5 3/4"	10'-8 3/4"
8S02b	2	WEBS	8	2	13'-4 3/8"	26'-8 5/8"	10'-5 3/8"	10'-8 3/8"
8S02c	3	WEBS	8	2	13'-4"	26'-7 7/8"	10'-5"	10'-8"
8S02d	4	WEBS	8	2	13'-3 1/2"	26'-7 1/8"	10'-4 5/8"	10'-7 5/8"
8S02e	5	WEBS	8	2	13'-3 1/8"	26'-6 3/8"	10'-4 1/4"	10'-7 1/8"
8S02f	6	WEBS	8	2	13'-2 3/4"	26'-5 5/8"	10'-3 7/8"	10'-6 3/4"
8S02g	7	WEBS	8	2	13'-2 3/8"	26'-4 7/8"	10'-3 1/2"	10'-6 3/8"
8S02h	8	WEBS	8	2	13'-2"	26'-4 1/8"	10'-3 1/8"	10'-6"
8S02j	9	WEBS	8	2	13'-1 5/8"	26'-3 1/4"	10'-2 7/8"	10'-5 5/8"
8S02k	10	WEBS	8	2	13'-1 1/4"	26'-2 1/2"	10'-2 1/2"	10'-5 1/4"
8S02m	11	WEBS	8	2	13'-0 7/8"	26'-1 3/4"	10'-2 1/8"	10'-4 7/8"
8S02n	12	WEBS	8	2	13'-0 1/2"	26'-1"	10'-1 3/4"	10'-4 1/2"
8S02p	13	WEBS	8	2	13'-0 1/8"	26'-0 1/4"	10'-1 3/8"	10'-4 1/8"
8S02q	14	WEBS	8	2	12'-11 3/4"	25'-11 1/2"	10'-1"	10'-3 3/4"
8S02r	15	WEBS	8	2	12'-11 3/8"	25'-10 3/4"	10'-0 5/8"	10'-3 3/8"
8S02s	16	WEBS	8	2	12'-11"	25'-10"	10'-0 1/4"	10'-3"
8S02t	17	WEBS	8	2	12'-10 5/8"	25'-9 1/4"	9'-11 7/8"	10'-2 5/8"
8S02u	18	WEBS	8	2	12'-10 1/4"	25'-8 1/2"	9'-11 1/2"	10'-2 1/4"
8S02v	19	WEBS	8	2	12'-9 7/8"	25'-7 5/8"	9'-11 1/8"	10'-1 7/8"
8S02w	20	WEBS	8	2	12'-9 1/2"	25'-6 7/8"	9'-10 3/4"	10'-1 1/2"





REINFORCING BAR DETAILING

LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK; D - DEVIATOR; S - SEGMENT
- 5 — BAR SIZE

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 8M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	9,601
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	53.6
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-8M, S2-8M, N3-8M AND S3-8M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

SENIOR DESIGN ENGR. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVAL RECOMM. — DATE
APPROVED FOR USE BY UDOT — DATE

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 8M REINFORCING II

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 171 OF 190

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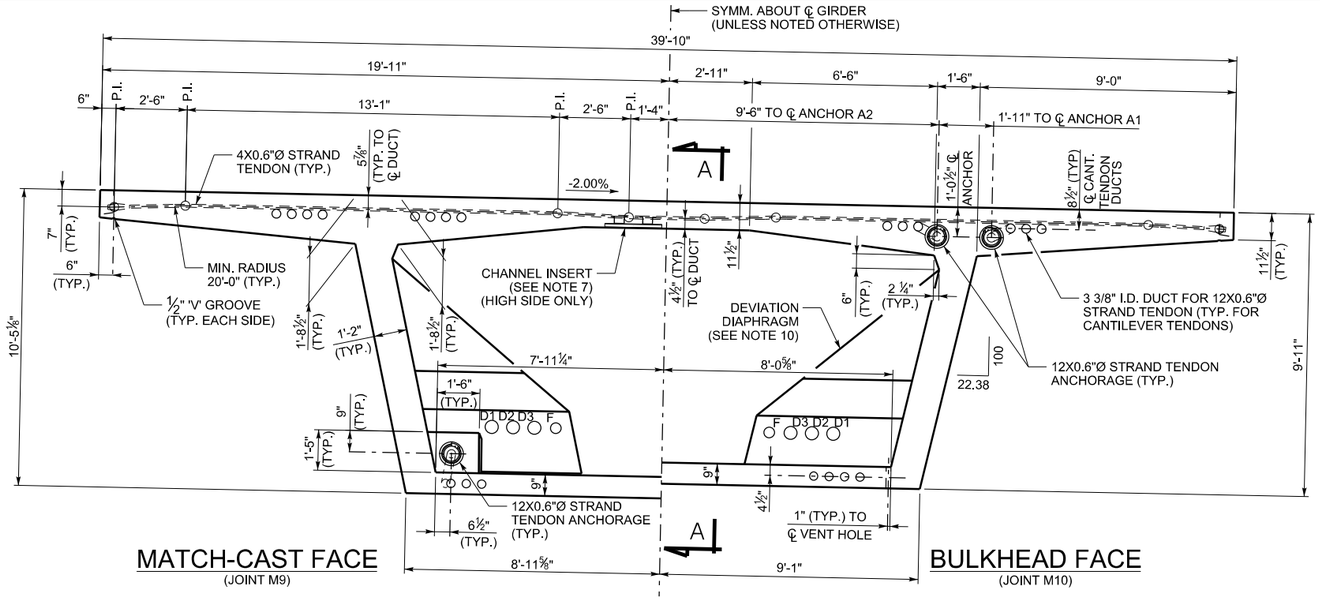
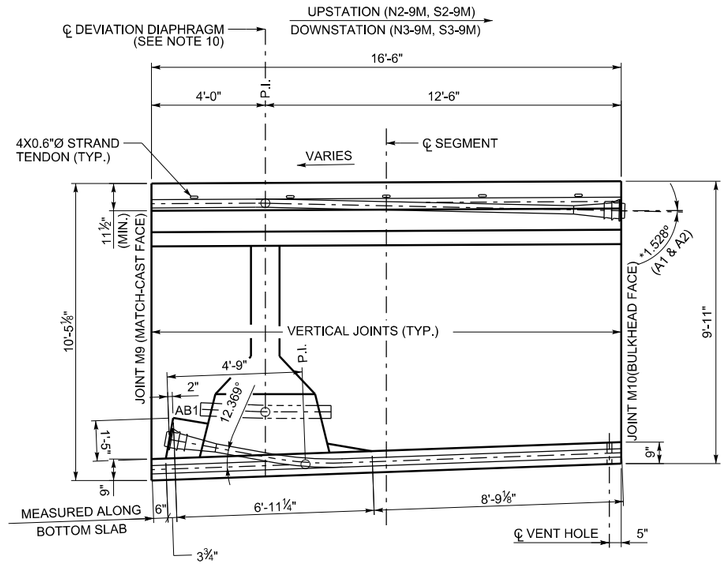
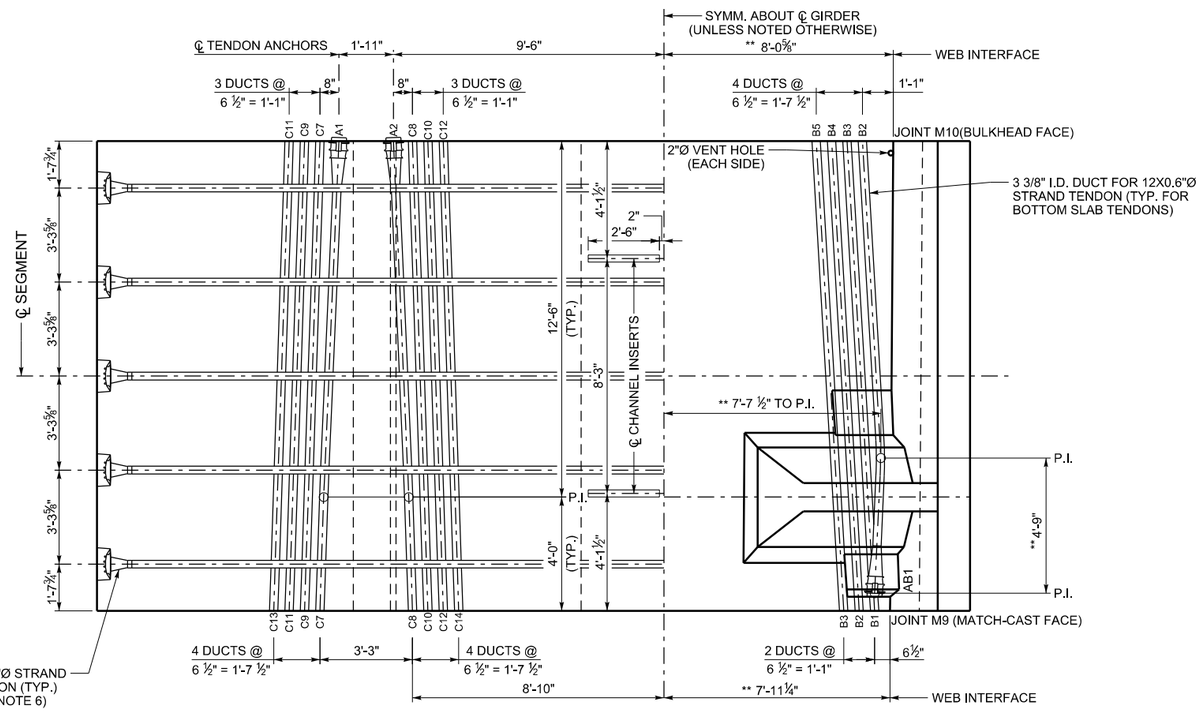
8/6/2008



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)



SECTION A-A
(TOP SLAB ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)



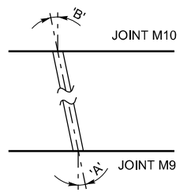
PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB
(** MEASURED ALONG BOTTOM SLAB)

TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
  B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M9 DUCT POSITION	'A'	JOINT M10 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 -C14	1.880°	C7 - C12	1.880°
AB1	2.657°	B2	3.360°
B1	3.360°	B3	3.360°
B2	3.360°	B4	3.360°
B3	3.360°	B5	3.360°

NOTES:
1. THIS DRAWING VALID FOR SEGMENT N2-9M, S2-9M, N3-9M AND S3-9M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. * POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.
10. FOR DEVIATION DIAPHRAGM DETAILS, SEE SEGMENT 9M REINFORCING II SHEET.
11. DRAPED TENDONS ARE 27X0.6" Ø STRAND TENDONS. FUTURE TENDONS ARE 19X0.6" Ø STRAND TENDONS

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 02/08 | CHECK DSL 08/08
DRAWN SJF 02/08 | CHECK BTL 02/08
QUANT. BTL 08/08 | CHECK KRM 08/08

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER
BRIDGE - MOAB UTAH
SEGMENT 9M DIMS & PT DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
F-763 DRG. NO.
SHT. 172 OF 190

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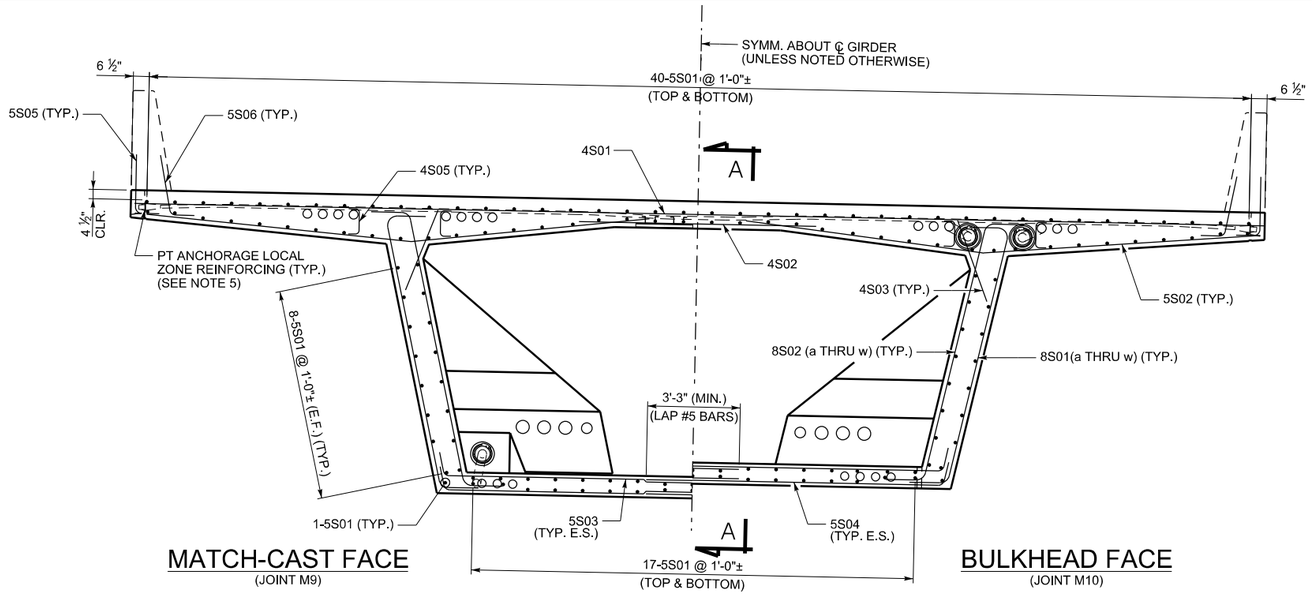
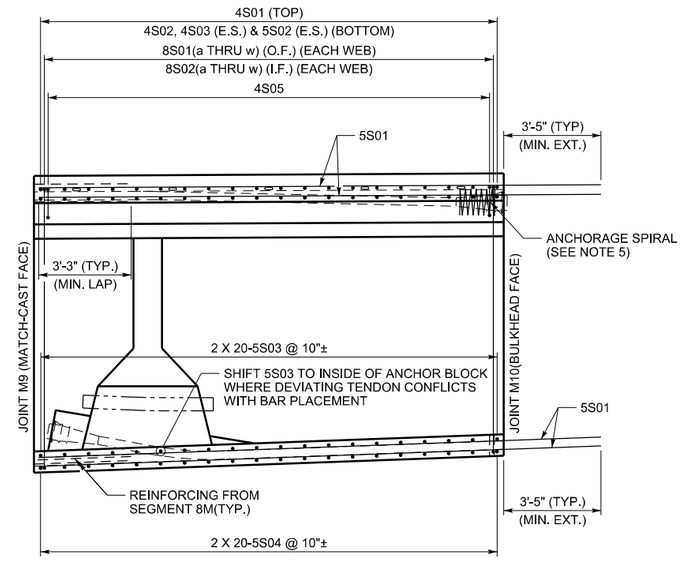


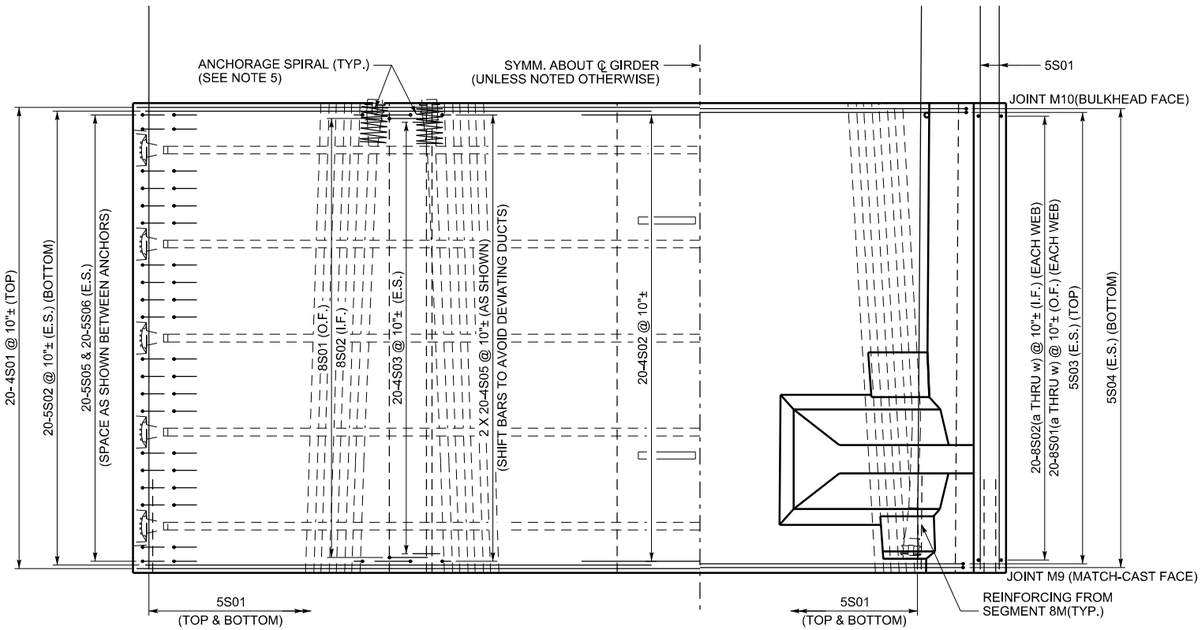
CROSS SECTION

(DEVIATION DIAPHRAGM REINFORCING NOT SHOWN FOR CLARITY, SEE SEGMENT 9M REINFORCING II SHEET FOR REINFORCING DETAILS)



SECTION A-A

(DEVIATION DIAPHRAGM REINFORCING NOT SHOWN FOR CLARITY, SEE SEGMENT 9M REINFORCING II SHEET FOR REINFORCING DETAILS)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

(DEVIATION DIAPHRAGM REINFORCING NOT SHOWN FOR CLARITY, SEE SEGMENT 9M REINFORCING II SHEET FOR REINFORCING DETAILS)

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-9M, S2-9M, N3-9M AND S3-9M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REVISIONS REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM.: _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT: _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

SEGMENT 9M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 173 OF 190

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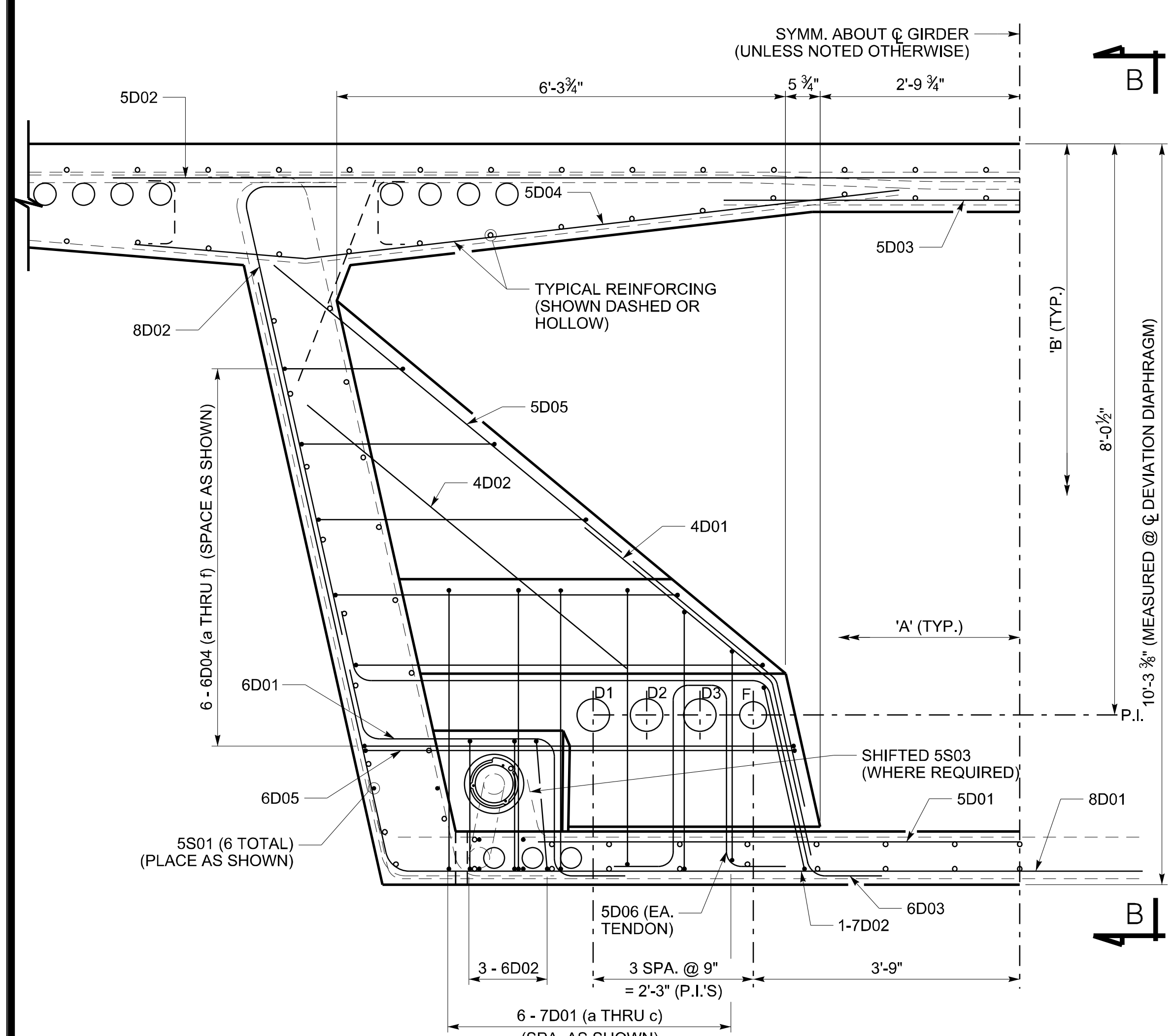
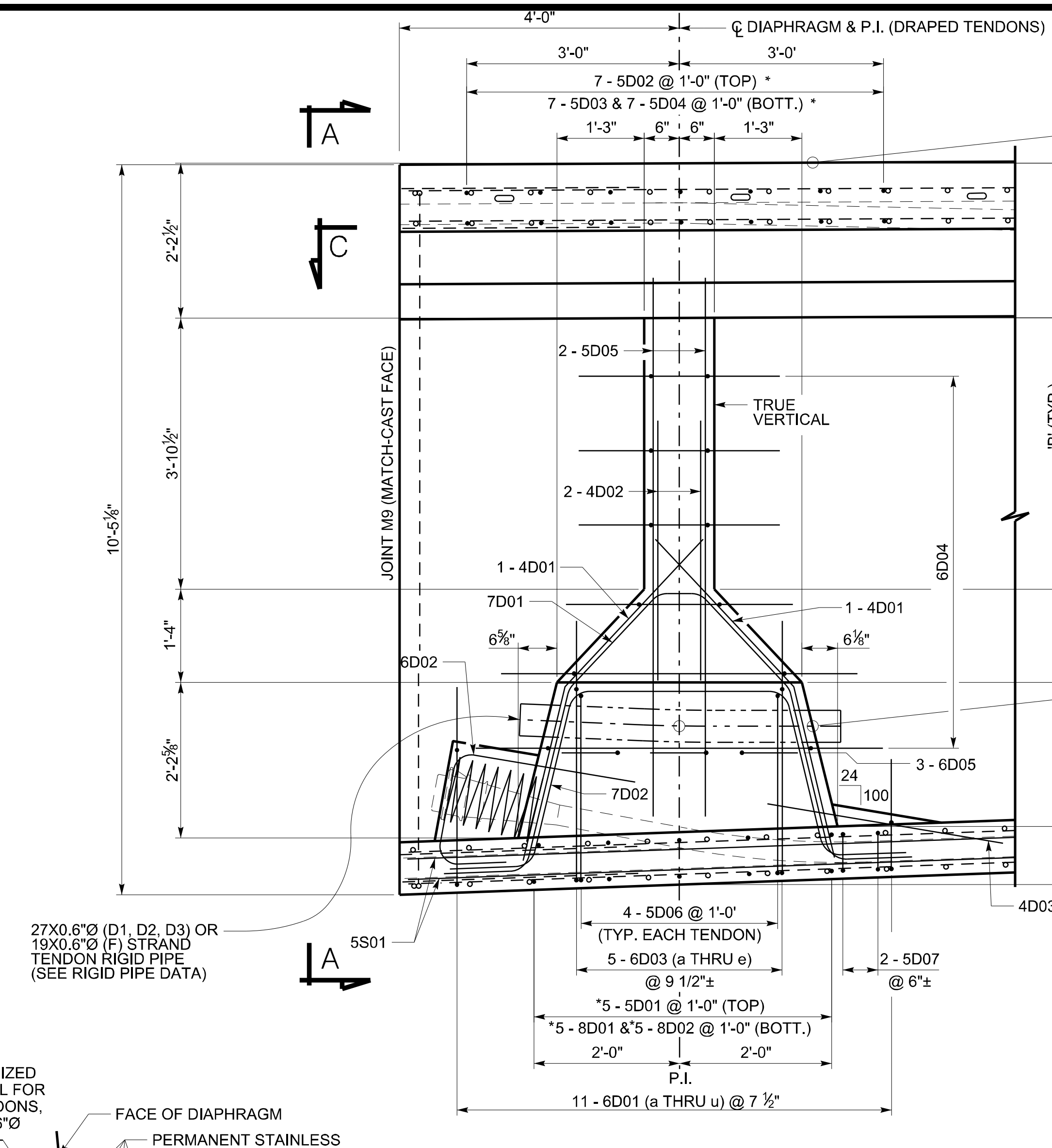
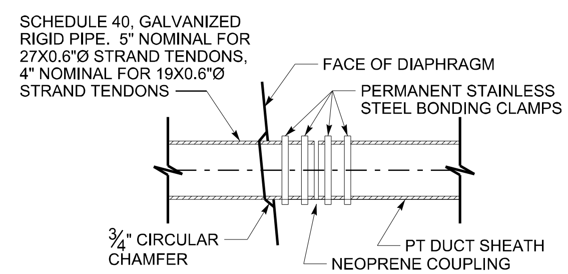
8/6/2008



VIEW A-A

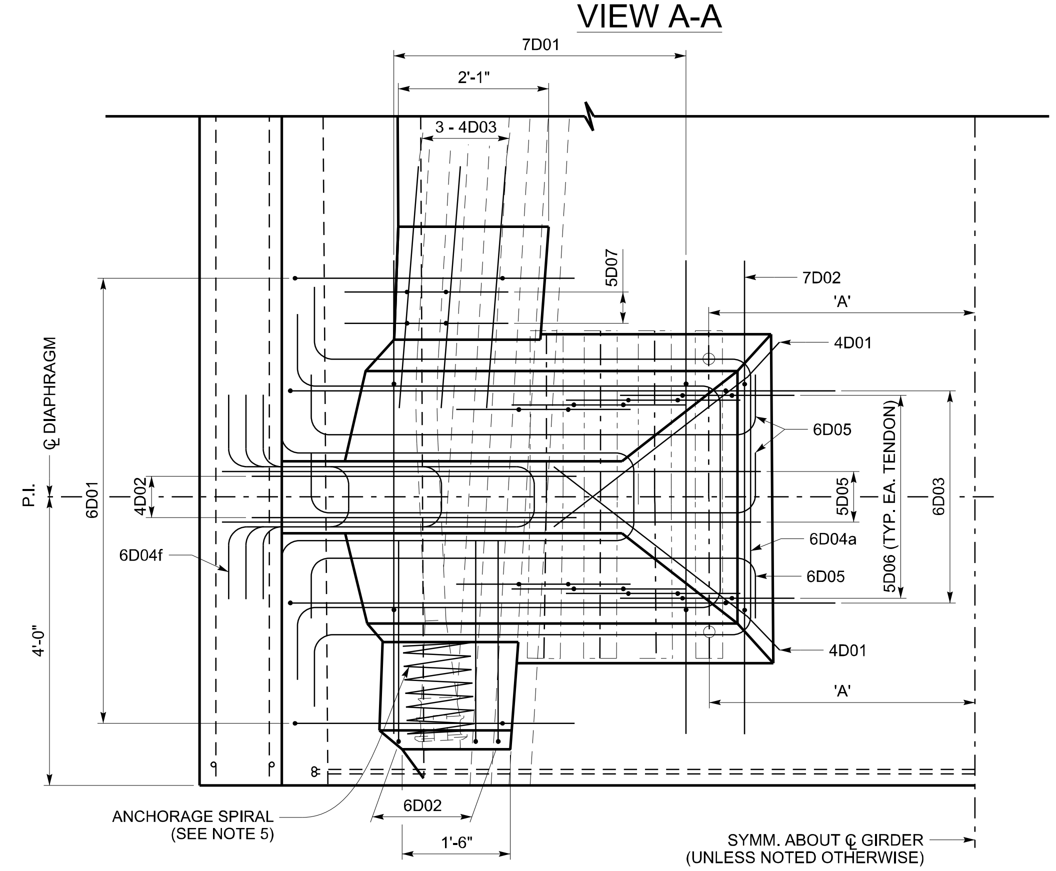


VIEW B-B



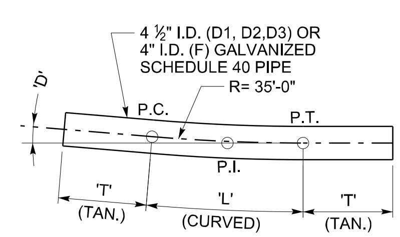
PT DUCT CONNECTION DETAIL

(EXTERNAL DRAPED TENDONS ONLY)



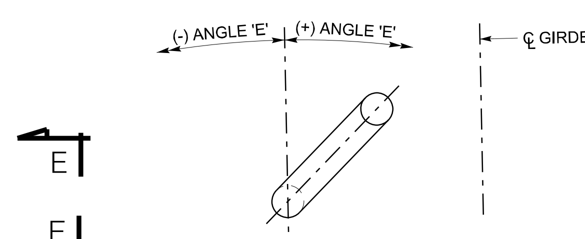
VIEW C-C

(5S05, 5D01, 8D01 & 8D02 NOT SHOWN FOR CLARITY)



RIGID PIPE DATA

('D' MEASURED IN PLANE OF 3D CURVE)



VIEW E-E

(LOOKING TOWARDS PIER)
(ANGLE 'E' REFERENCE LINE IS PARALLEL TO ℄ GIRDER WHICH IS SLOPED 2.0% TO MATCH SUPERELEVATION)

DRAPED TENDON VARIABLE DIMENSIONS - SYMM. ABOUT ℄ GIRDER											
TENDON	EXIT POINT (PIER SIDE)		P.I.		EXIT POINT (SPAN SIDE)		RIGID PIPE LENGTHS (FT)			RIGID PIPE ANGLES (DEGREES)	
	'A'	'B'	'A'	'B'	'A'	'B'	'L'	'T'	TOTAL	'D'	'E'
D1	6.016	7.966	6.000	8.042	6.000	8.051	1.527	1.570	4.667	2.50	-12.3
D2	5.240	7.962	5.250	8.042	5.250	8.051	1.527	1.570	4.667	2.50	7.2
D3	4.465	7.960	4.500	8.042	4.500	8.051	1.527	1.570	4.667	2.50	24.0
F	3.725	7.987	3.750	8.042	3.750	8.051	1.222	1.723	4.667	2.00	25.7

NOTES:

1. THIS DRAWING VALID FOR ALL SEGMENT TYPES N2-9B, S2-9B, N3-9B AND S3-9B.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE POST-TENSIONING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHEIVE EQUAL SPACING FROM FIRST TO LAST BAR.

*7. 5D01, 5D02, 5D03, 5D04, 8D01 & 8D02 BARS ARE IN ADDITION TO TYPICAL SECTION REINFORCING AND ARE SPACED BETWEEN TYPICAL REINFORCING SETS.

8. INSTALL RIGID PIPE FOR FUTURE19X0.6"Ø STRAND TENDONS.

NO.	DATE	BY	REVISIONS	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	RKM	05/08	CHECK KVH	08/08
DRAWN	SJF	05/08	CHECK BTL	02/08
QUANT.	BTL	08/08	CHECK KRM	08/08

APPROVAL RECOMM. ____ DATE ____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT ____ DATE ____ UDOT BRIDGE ENGR.

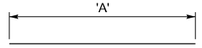
US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 9M REINFORCING II
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY
F-763
DRG. NO.

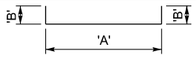
SHT. 174 OF 190

SEGMENT TYPE 9M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-9M, S2-9M, N3-9M AND S3-9M.

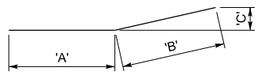
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"	791'-8"	39'-7"
4S02	TOP SLAB	4	20	8'-8"	173'-4"	8'-8"
4S03	TOP SLAB	4	40	2'-9"	110'-0"	2'-9"
5S01	SEGMENT	5	160	19'-9 1/2"	3166'-8"	19'-9 1/2"
4D02	DIAPHRAGM	4	4	5'-10"	23'-4"	5'-10"
4D03	DIAPHRAGM	4	6	3'-5"	20'-6"	3'-5"
5D01	BOTTOM SLAB	5	5	13'-8"	68'-4"	13'-8"
5D02	TOP SLAB	5	7	25'-6"	178'-6"	25'-6"
5D03	TOP SLAB	5	7	8'-4"	58'-4"	8'-4"



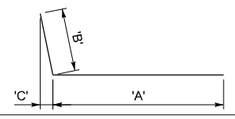
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
4S05	TOP SLAB	4	80	1'-9"	140'-0"	1'-0"	0'-4 ½"
6D05	DIAPHRAGM	6	6	8'-0"	48'-0"	6'-0"	1'-0"



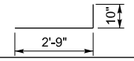
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'	'C'
5S02	TOP SLAB	5	40	18'-5"	736'-8"	8'-8"	9'-9"	1'-11"
4D01	DIAPHRAGM	4	4	5'-11"	23'-8"	3'-5"	2'-6"	1'-6 ⅜"
5D04	TOP SLAB	5	14	10'-10"	151'-8"	8'-5"	2'-5"	0'-5 ¾"
5D05	DIAPHRAGM	5	4	11'-0"	44'-0"	9'-2"	1'-10"	1'-1 ½"



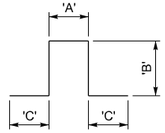
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'	'C'
5S03	BOTTOM SLAB	5	40				0'-10"	0'-2"
5S04	BOTTOM SLAB	5	40				0'-10"	0'-2"
5S06	TOP SLAB	5	40				0'-10"	0'-2"
8D01	BOTT. SLAB/WEB	8	10	19'-1"	190'-10"		8'-8"	1'-10 ¾"



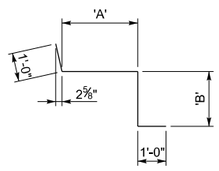
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



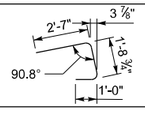
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'	'C'
5D06	DIAPHRAGM	5	32	7'-7"	242'-8	0'-9"	2'-7"	0'-10"
5D07	DIAPHRAGM	5	4	3'-5 ¼"	13-9"	0'-7 ¼"	0'-7"	0'-10"
6D04a	DIAPHRAGM	6	2	17'-8 ½"	35'-5"	3'-8 ½"	6'-0"	1'-0"
6D04b	DIAPHRAGM	6	2	16'-3 ½"	32'-7"	2'-9 ½"	5'-9"	1'-0"
6D04c	DIAPHRAGM	6	2	12'-8 ½"	25'-5"	1'-0 ½"	4'-10"	1'-0"
6D04d	DIAPHRAGM	6	2	10'-4"	20'-8"	0'-9"	3'-9 ½"	1'-0"
6D04e	DIAPHRAGM	6	2	8'-3"	16'-6"	0'-9"	2'-9"	1'-0"
6D04f	DIAPHRAGM	6	2	6'-1"	12'-2"	0'-9"	1'-8"	1'-0"



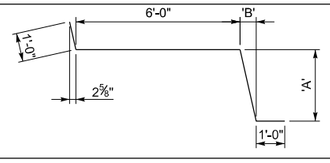
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6D01a	DIAPHRAGM	6	2	6'-7 ¾"	13'-3 ½"	2'-9 ⅛"	1'-10 ⅝"
6D01b	DIAPHRAGM	6	2	6'-6 ½"	13'-1"	2'-9 ⅜"	1'-9 ⅛"
6D01c	DIAPHRAGM	6	2	6'-5 ¼"	12'-10 ½"	2'-9 ⅝"	1'-7 ⅝"
6D01d	DIAPHRAGM	6	2	6'-4"	12'-8"	2'-9 ⅞"	1'-6 ⅛"
6D01e	DIAPHRAGM	6	2	6'-2 ⅝"	12'-5 ¼"	2'-10 ⅛"	1'-4 ½"
6D01f	DIAPHRAGM	6	2	6'-1 ⅜"	12'-2 ¾"	2'-10 ⅜"	1'-3"
6D01g	DIAPHRAGM	6	2	6'-0 ⅛"	12'-0 ¼"	2'-10 ⅝"	1'-1 ½"
6D01h	DIAPHRAGM	6	2	5'-11"	11'-10"	2'-11"	1'-0"
6D01k	DIAPHRAGM	6	2	5'-9 ⅝"	11'-7 ¼"	2'-11 ¼"	0'-10 ⅜"
6D01m	DIAPHRAGM	6	2	5'-8 ⅜"	11'-4 ¾"	2'-11 ½"	0'-8 ⅞"
6D01n	DIAPHRAGM	6	2	5'-7 ⅛"	11'-2 ¼"	2'-11 ¾"	0'-7 ⅜"



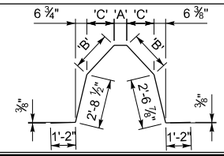
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
6D02	DIAPHRAGM	6	6	5'-3 ¾"	31'-10 ½"



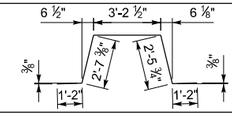
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6D03a	DIAPHRAGM	6	2	10'-8 ¼"	21'-4 ½"	2'-8 ¼"	0'-6 ½"
6D03b	DIAPHRAGM	6	2	10'-7 ⅞"	21'-3 ¾"	2'-7 ⅞"	0'-6 ⅜"
6D03c	DIAPHRAGM	6	2	10'-7 ⅝"	21'-3 ½"	2'-7 ⅝"	0'-6 ¼"
6D03d	DIAPHRAGM	6	2	10'-7 ⅜"	21'-2 ¾"	2'-7 ⅜"	0'-6 ¼"
6D03e	DIAPHRAGM	6	2	10'-7 ⅛"	21'-2 ¼"	2'-7 ⅛"	0'-6 ¼"



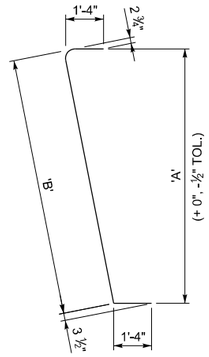
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'	'C'
7D01a	DIAPHRAGM	7	8	11'-10 ¾"	95'-2"	0'-8 ⅝"	1'-9 ⅜"	1'-2 ⅝"
7D01b	DIAPHRAGM	7	2	11'-8 ¾"	23'-5 ½"	1'-1 ⅛"	1'-6 ⅛"	1'-0 ⅜"
7D01c	DIAPHRAGM	7	2	11'-2 ⅜"	22'-4 ¾"	2'-3"	0'-8"	0'-5 ½"



MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
7D02	DIAPHRAGM	7	2	10'-7 ⅝"	21'-3 ¼"

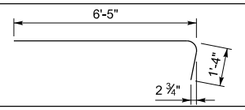


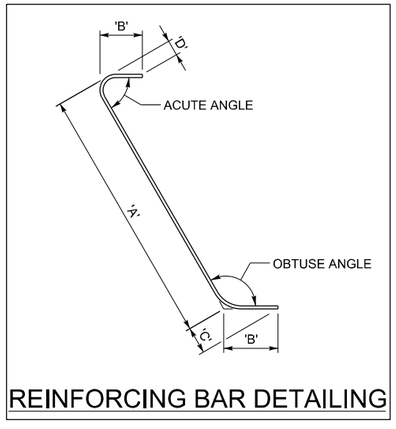
MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2			9'-10 3/8"	
8S01b	1	WEBS	8	2			9'-10 1/8"	
8S01c	2	WEBS	8	2			9'-9 1/2"	
8S01d	2	WEBS	8	2			9'-9 1/2"	
8S01e	3	WEBS	8	2			9'-8 7/8"	
8S01f	3	WEBS	8	2			9'-8 7/8"	
8S01g	4	WEBS	8	2			9'-8 1/4"	
8S01h	4	WEBS	8	2			9'-8 1/4"	
8S01j	5	WEBS	8	2			9'-7 5/8"	
8S01k	5	WEBS	8	2			9'-7 5/8"	
8S01m	6	WEBS	8	2			9'-7"	
8S01n	6	WEBS	8	2			9'-7"	
8S01p	7	WEBS	8	2			9'-6 3/8"	
8S01q	7	WEBS	8	2			9'-6 3/8"	
8S01r	8	WEBS	8	2			9'-5 3/4"	
8S01s	8	WEBS	8	2			9'-5 3/4"	
8S01t	9	WEBS	8	2			9'-5 1/8"	
8S01u	9	WEBS	8	2			9'-5 1/8"	
8S01v	10	WEBS	8	2			9'-4 5/8"	
8S01w	10	WEBS	8	2			9'-4 5/8"	



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2				
8S02b	1	WEBS	8	2				
8S02c	2	WEBS	8	2				
8S02d	2	WEBS	8	2				
8S02e	3	WEBS	8	2				
8S02f	3	WEBS	8	2				
8S02g	4	WEBS	8	2				
8S02h	4	WEBS	8	2				
8S02j	5	WEBS	8	2				
8S02k	5	WEBS	8	2				
8S02m	6	WEBS	8	2				
8S02n	6	WEBS	8	2				
8S02p	7	WEBS	8	2				
8S02q	7	WEBS	8	2				
8S02r	8	WEBS	8	2				
8S02s	8	WEBS	8	2				
8S02t	9	WEBS	8	2				
8S02u	9	WEBS	8	2				
8S02v	10	WEBS	8	2				
8S02w	10	WEBS	8	2				

MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
8D02	WEB	8	10	7'-9"	77'-6"





REINFORCING BAR DETAILING

LEGEND

5 S 01

- 01 — BAR NUMBER
- S - SEGMENT
- D - DEVIATOR
- B - ANCHOR BLOCK
- 5 — BAR SIZE

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 9M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	11,386
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	56.7
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR ALL SEGMENT TYPES N2-9M, S2-9M, N3-9M AND S3-9M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 9M REINFORCING III

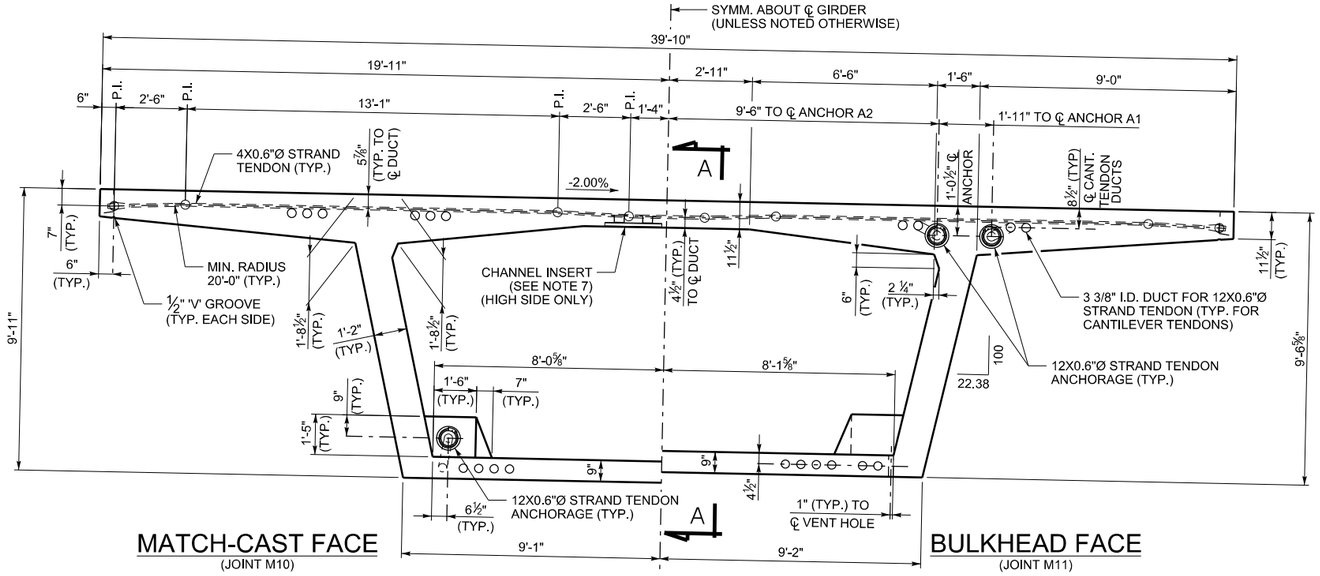
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

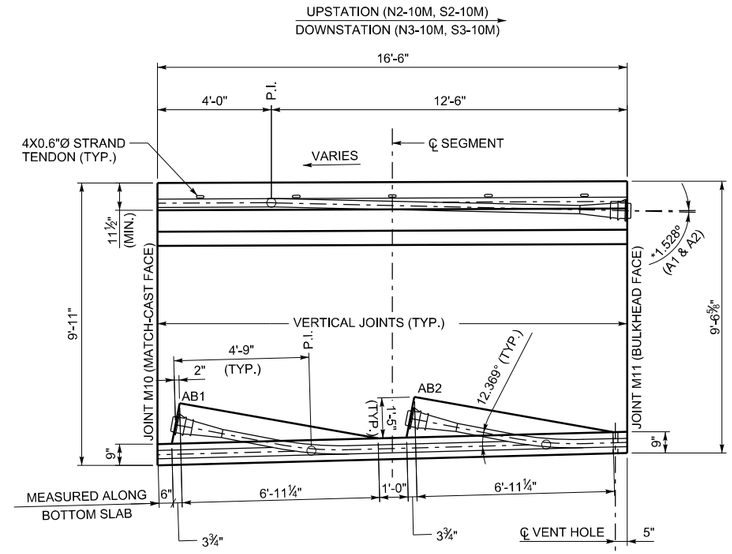
SHT. 175 OF 190

$$riot$$
$$date$$



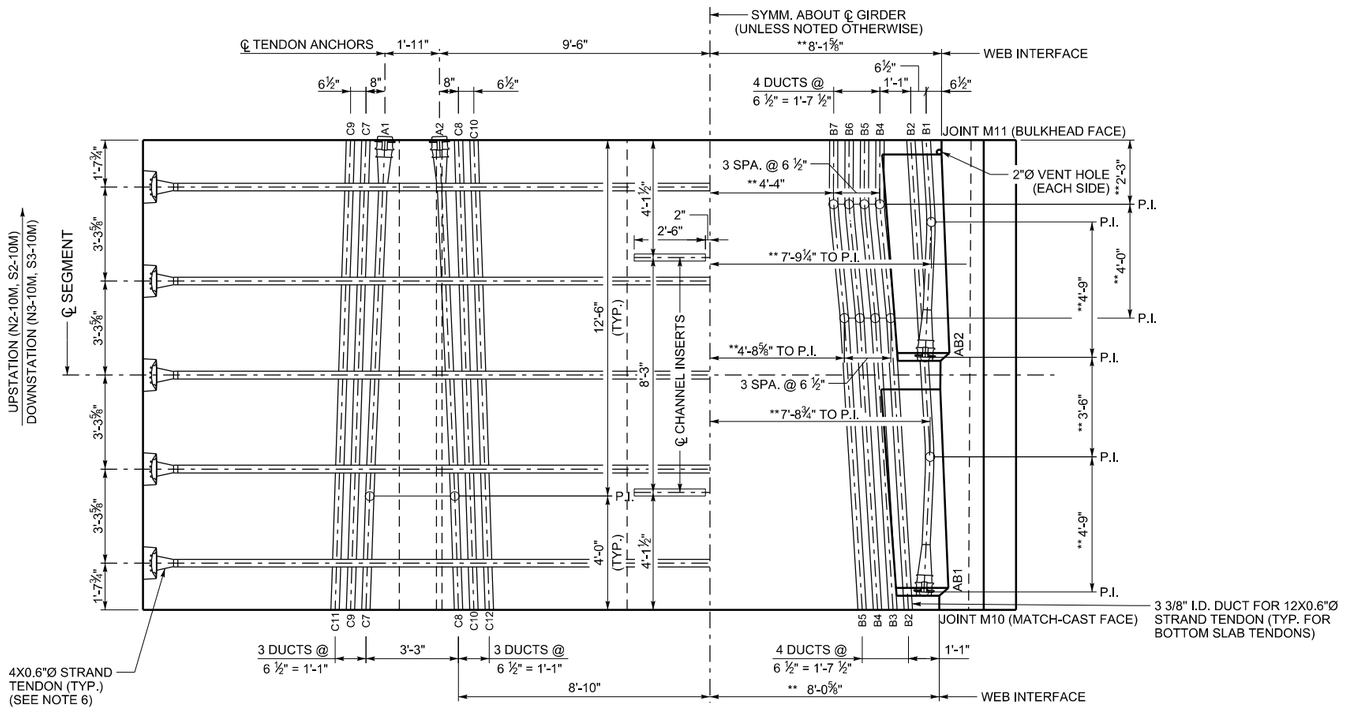
CROSS SECTION

(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)
ANCHOR BLOCK DIMENSIONS TYPICAL
FOR BOTH AB1 AND AB2 BLOCKS)



SECTION A-A

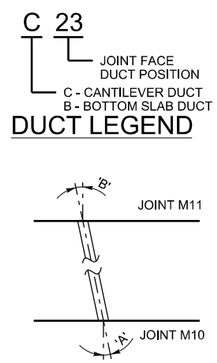
(TOP SLAB ANGLES SHOWN WITH
RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

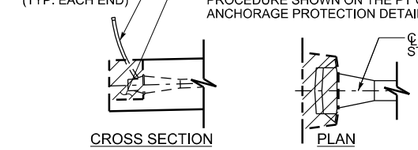
(** MEASURED ALONG BOTTOM SLAB)



DUCT LEGEND

DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M10 DUCT POSITION	'A'	JOINT M11 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9 - C12	1.880°	C7 - C10	1.880°
AB1	2.549°	B2	3.463°
AB2	2.549°	B1	3.450°
B2	3.475°	B4	0°
B3	3.475°	B5	0°
B4	3.475°	B6	0°
B5	3.475°	B7	0°



TRANSVERSE TENDON BLOCKOUT DETAIL

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-10M, S2-10M, N3-10M AND S3-10M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. * POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE)
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

SENIOR DESIGN ENGR. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVAL RECOMM. — DATE
APPROVED FOR USE BY UDOT — DATE

US-191; OVER COLORADO RIVER
BRIDGE - MOAB UTAH
SEGMENT 10M DIMS & PT DETAILS

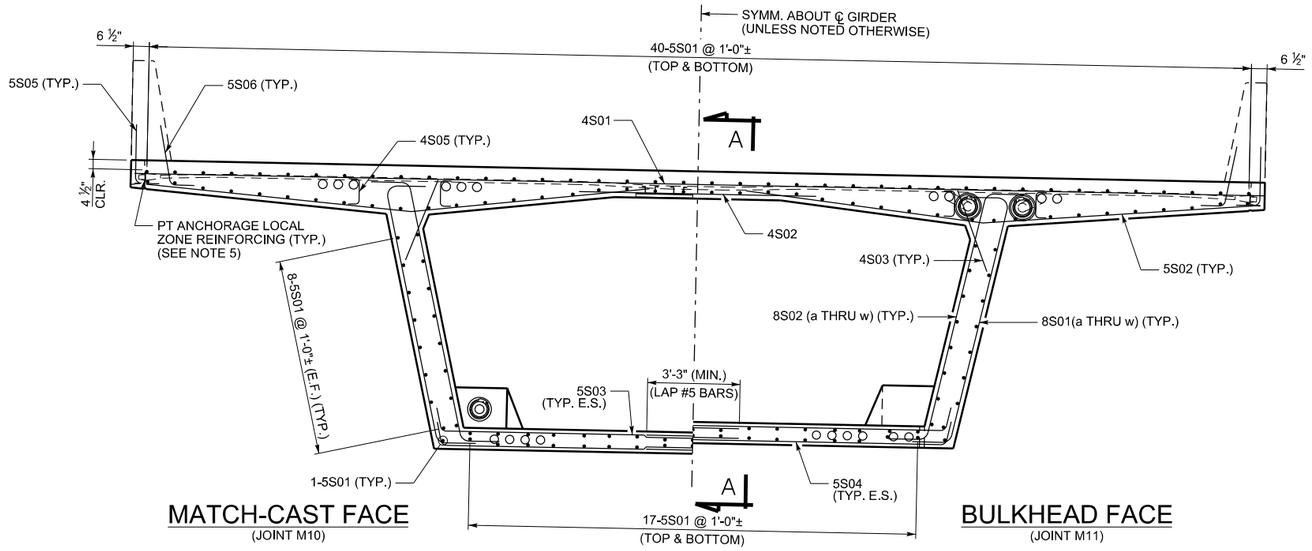
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

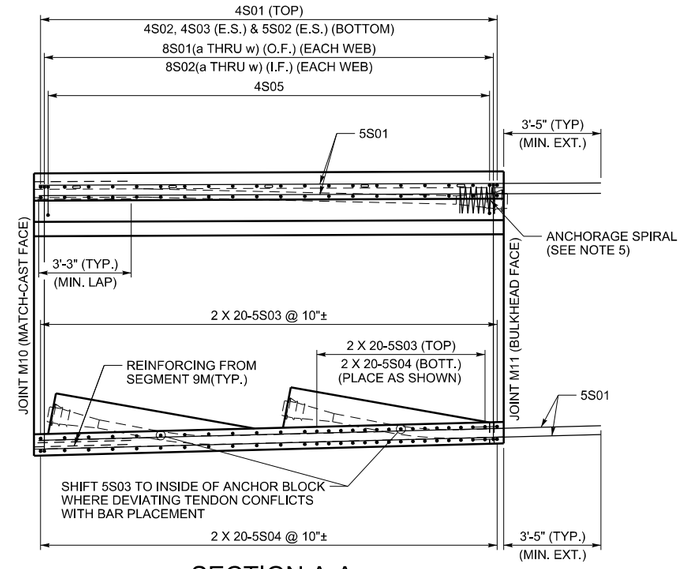
F-763
DRG. NO.

SHT. 176 OF 190

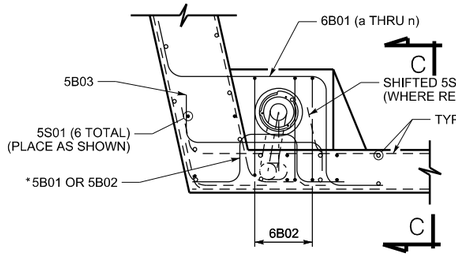
$$finish
$$closeout



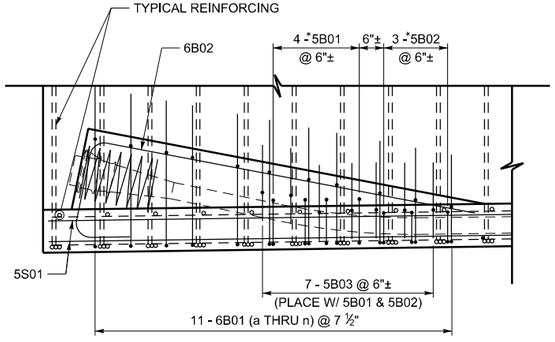
CROSS SECTION
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



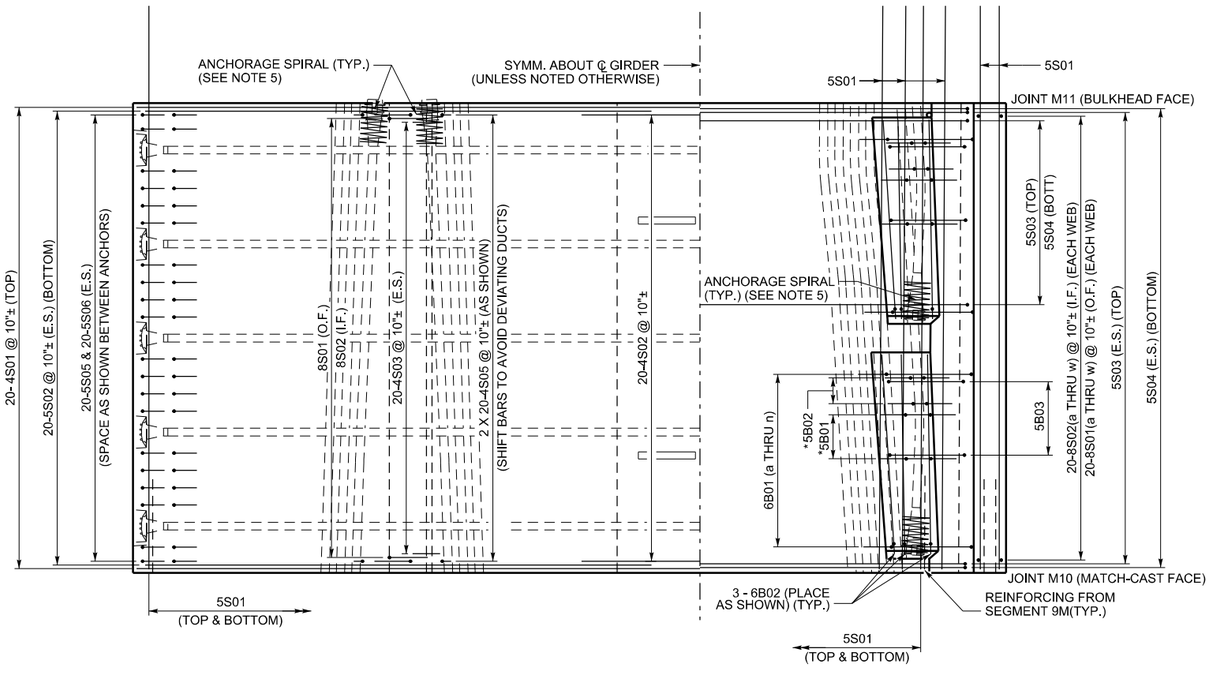
SECTION A-A
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



DETAIL 'B'
(TYPICAL EACH BLOCK)



SECTION C-C
(TYPICAL EACH BLOCK)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-10M, S2-10M, N3-10M AND S3-10M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

*7. PLACE 5B01 AND 5B02 AROUND CURVED PORTION OF DUCT.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 10M REINFORCING I

PROJECT NUMBER: BRF-0191(58)129

GRAND
COUNTY

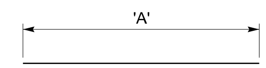
F-763
DRG. NO.

SHT. 177 OF 190

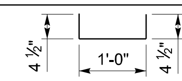
$$files
$$sheets

SEGMENT TYPE 10M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-10M, S2-10M, N3-10M AND S3-10M.

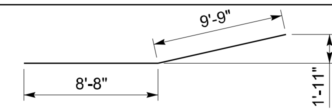
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"		39'-7"
4S02	TOP SLAB	4	20	8'-8"		8'-8"
4S03	TOP SLAB	4	40	2'-9"		2'-9"
5S01	SEGMENT	5	160	19'-9 1/2"		19'-9 1/2"



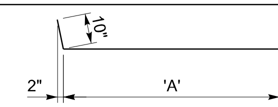
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



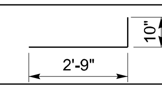
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



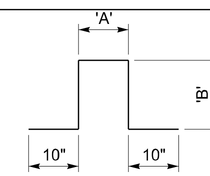
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	56			
5S04	BOTTOM SLAB	5	56			
5S06	TOP SLAB	5	40			



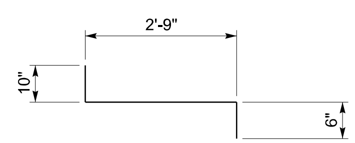
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



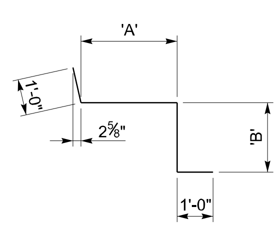
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
5B01	ANCHOR BLOCK	5	16	4'-4"	69'-4"	1'-0"	0'-10"
5B02	ANCHOR BLOCK	5	12	3'-5 ¼"	41'-3"	0'-7 ¼"	0'-7"



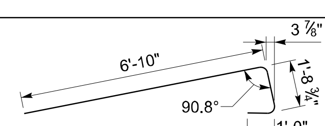
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5B03	ANCHOR BLOCK	5	28	4'-1"	114'-4"



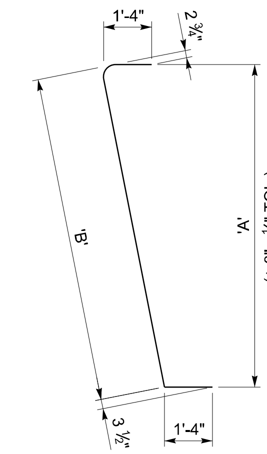
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6B01a	ANCHOR BLOCK	6	4	6'-7 ¾"	26'-7"	2'-9 ⅛"	1'-10 ⅝"
6B01b	ANCHOR BLOCK	6	4	6'-6 ½"	26'-2"	2'-9 ⅜"	1'-9 ⅛"
6B01c	ANCHOR BLOCK	6	4	6'-5 ¼"	25'-9"	2'-9 ⅝"	1'-7 ⅝"
6B01d	ANCHOR BLOCK	6	4	6'-4"	25'-4"	2'-9 ⅞"	1'-6 ⅛"
6B01e	ANCHOR BLOCK	6	4	6'-2 ⅝"	24'-10 ½"	2'-10 ⅛"	1'-4 ½"
6B01f	ANCHOR BLOCK	6	4	6'-1 ⅜"	24'-5 ½"	2'-10 ⅜"	1'-3"
6B01g	ANCHOR BLOCK	6	4	6'-0 ⅛"	24'-0 ½"	2'-10 ⅝"	1'-1 ½"
6B01h	ANCHOR BLOCK	6	4	5'-11"	23'-8"	2'-11"	1'-0"
6B01k	ANCHOR BLOCK	6	4	5'-9 ⅝"	23'-2 ½"	2'-11 ¼"	0'-10 ⅜"
6B01m	ANCHOR BLOCK	6	4	5'-8 ⅜"	22'-9 ½"	2'-11 ½"	0'-8 ⅞"
6B01n	ANCHOR BLOCK	6	4	5'-7 ⅛"	22'-4 ½"	2'-11 ¾"	0'-7 ⅜"



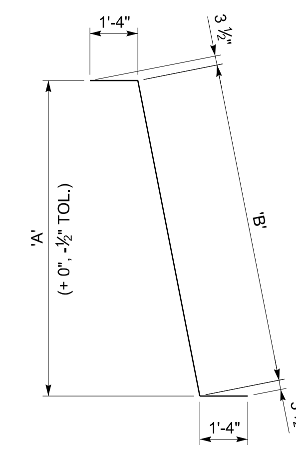
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
6B02	ANCHOR BLOCK	6	12	9'-6 ¾"	114'-9"

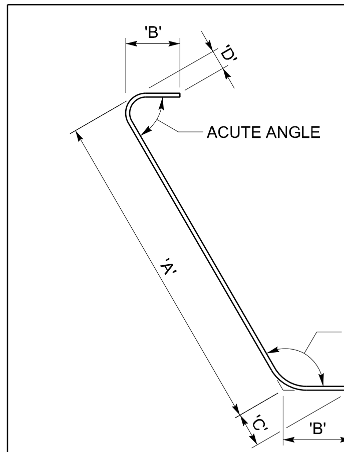


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2				
8S01b	1	WEBS	8	2				
8S01c	1	WEBS	8	2				
8S01d	2	WEBS	8	2				
8S01e	2	WEBS	8	2				
8S01f	2	WEBS	8	2				
8S01g	3	WEBS	8	2				
8S01h	3	WEBS	8	2				
8S01j	3	WEBS	8	2				
8S01k	4	WEBS	8	2				
8S01m	4	WEBS	8	2				
8S01n	4	WEBS	8	2				
8S01p	5	WEBS	8	2				
8S01q	5	WEBS	8	2				
8S01r	5	WEBS	8	2				
8S01s	6	WEBS	8	2				
8S01t	6	WEBS	8	2				
8S01u	6	WEBS	8	2				
8S01v	7	WEBS	8	2				
8S01w	7	WEBS	8	2				



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2				
8S02b	1	WEBS	8	2				
8S02c	1	WEBS	8	2				
8S02d	2	WEBS	8	2				
8S02e	2	WEBS	8	2				
8S02f	2	WEBS	8	2				
8S02g	3	WEBS	8	2				
8S02h	3	WEBS	8	2				
8S02j	3	WEBS	8	2				
8S02k	4	WEBS	8	2				
8S02m	4	WEBS	8	2				
8S02n	4	WEBS	8	2				
8S02p	5	WEBS	8	2				
8S02q	5	WEBS	8	2				
8S02r	5	WEBS	8	2				
8S02s	6	WEBS	8	2				
8S02t	6	WEBS	8	2				
8S02u	6	WEBS	8	2				
8S02v	7	WEBS	8	2				
8S02w	7	WEBS	8	2				





REINFORCING BAR DETAILING

LEGEND

5 S 01

- BAR NUMBER
- B - ANCHOR BLOCK
- D - DEVIATOR
- S - SEGMENT
- BAR SIZE

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 10M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	9,742
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	52.4
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-10M, S2-10M, N3-10M AND S3-10M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

NO.	DATE	BY	REMARKS

REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

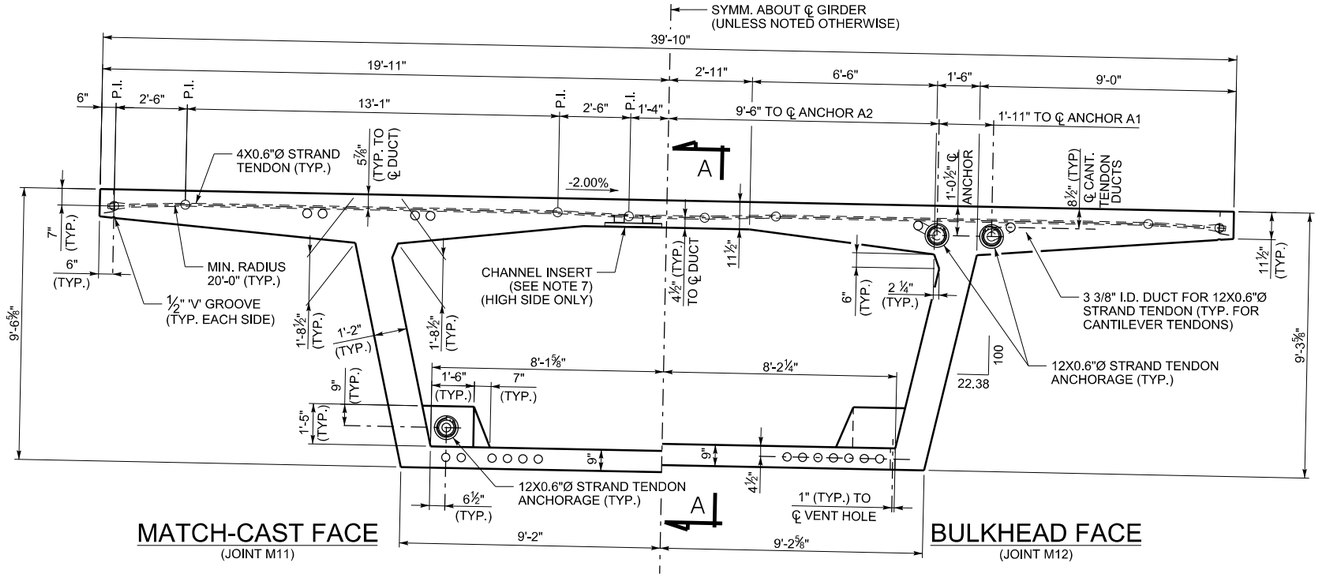
DESIGN BTL 02/08	CHECK DSL 08/08	APPROVAL RECOMM. ___ DATE ___ SENIOR DESIGN ENGR.
DRAWN SJF 02/08	CHECK BTL 02/08	
QUANT. BTL 08/08	CHECK KRM 08/08	APPROVED FOR USE BY UDOT ___ DATE ___ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 10M REINFORCING II

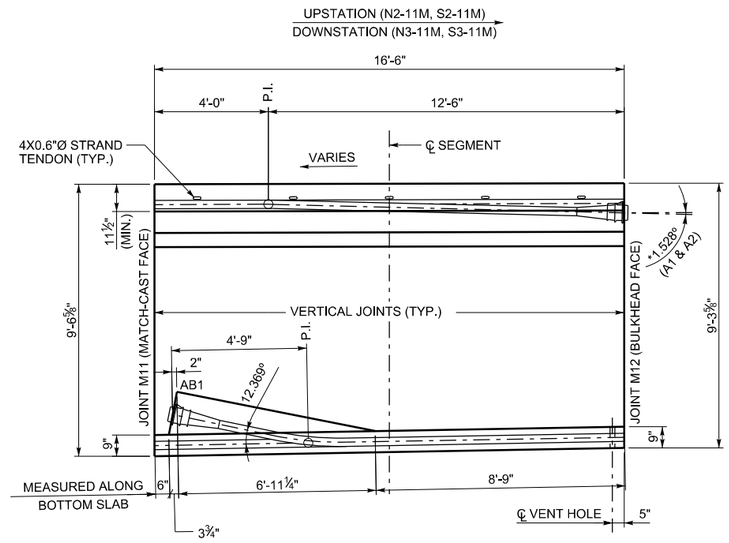
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

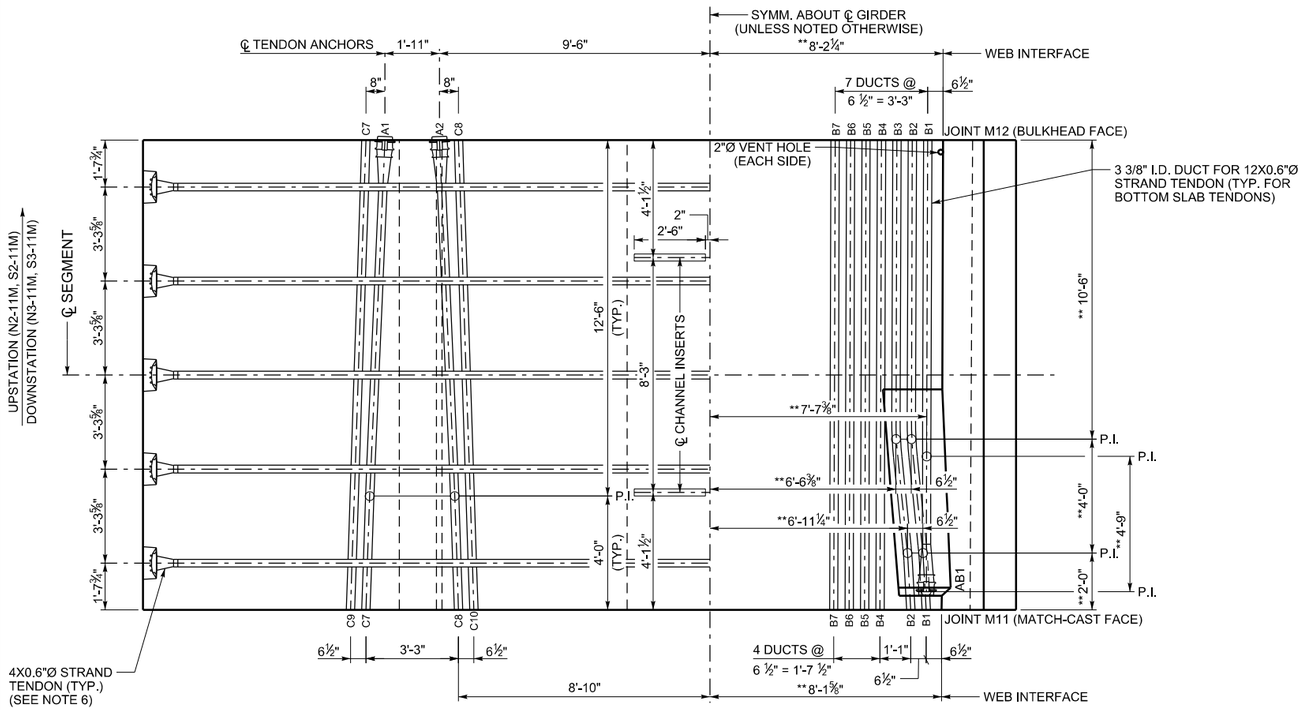
F-763
DRG. NO.



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)



SECTION A-A
(TOP SLAB ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)

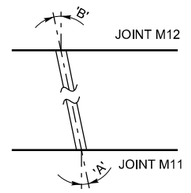


PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB
(** MEASURED ALONG BOTTOM SLAB)

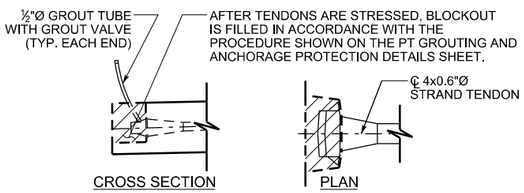
C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
- B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M11 DUCT POSITION	'A'	JOINT M12 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
C9	1.880°	C7	1.880°
C10	1.880°	C8	1.880°
AB1	0°	B1	0°
B1	3.563°	B2	0°
B2	3.463°	B3	0°
B4 - B7	0°	B4 - B7	0°



TRANSVERSE TENDON BLOCKOUT DETAIL

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-11M, S2-11M, N3-11M AND S3-11M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER. STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE)
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 02/08 | CHECK DSL 08/08
DRAWN SJF 02/08 | CHECK BTL 02/08
QUANT. BTL 08/08 | CHECK KRM 08/08

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
SEGMENT 11M DIMS & PT DETAILS

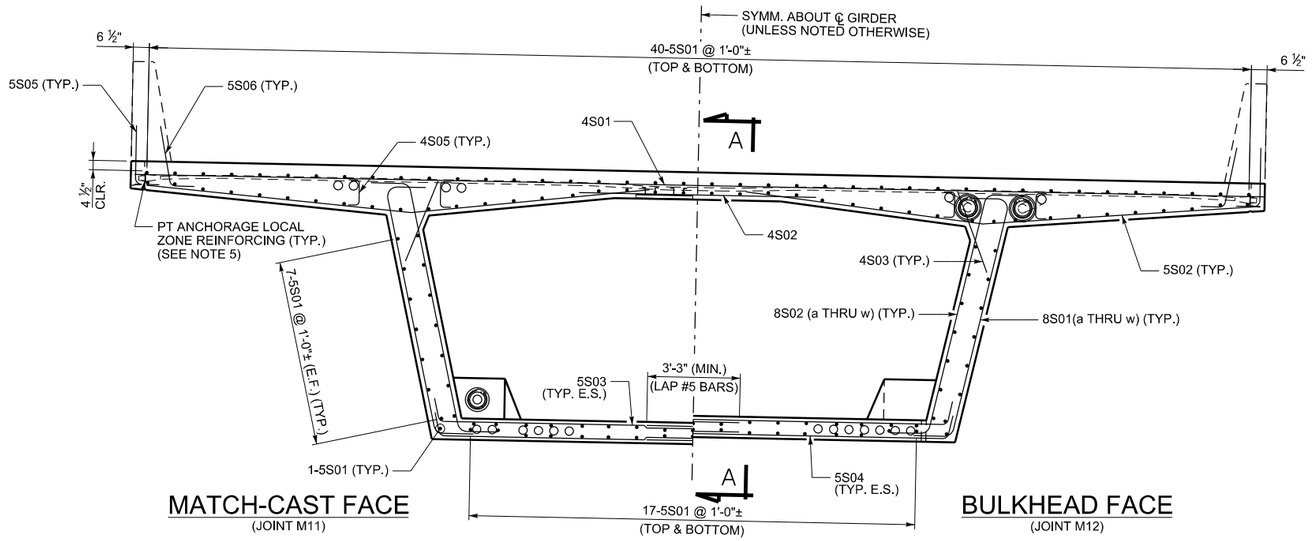
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

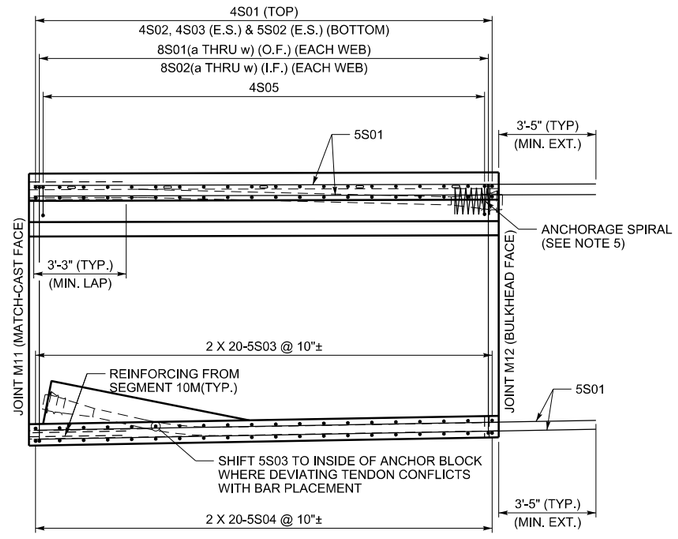
F-763 DRG. NO.

SHT. 179 OF 190

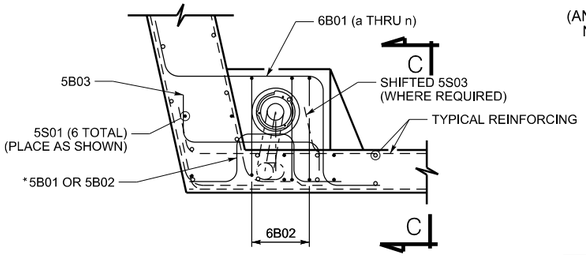
$date$ $time$ $file$



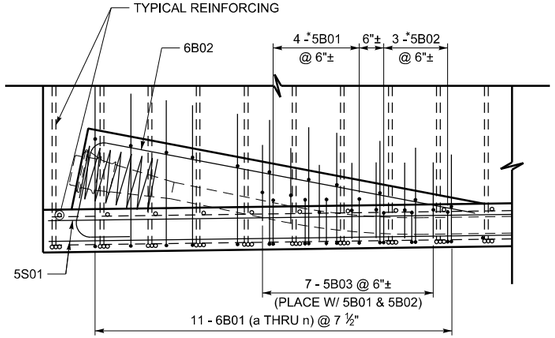
CROSS SECTION
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



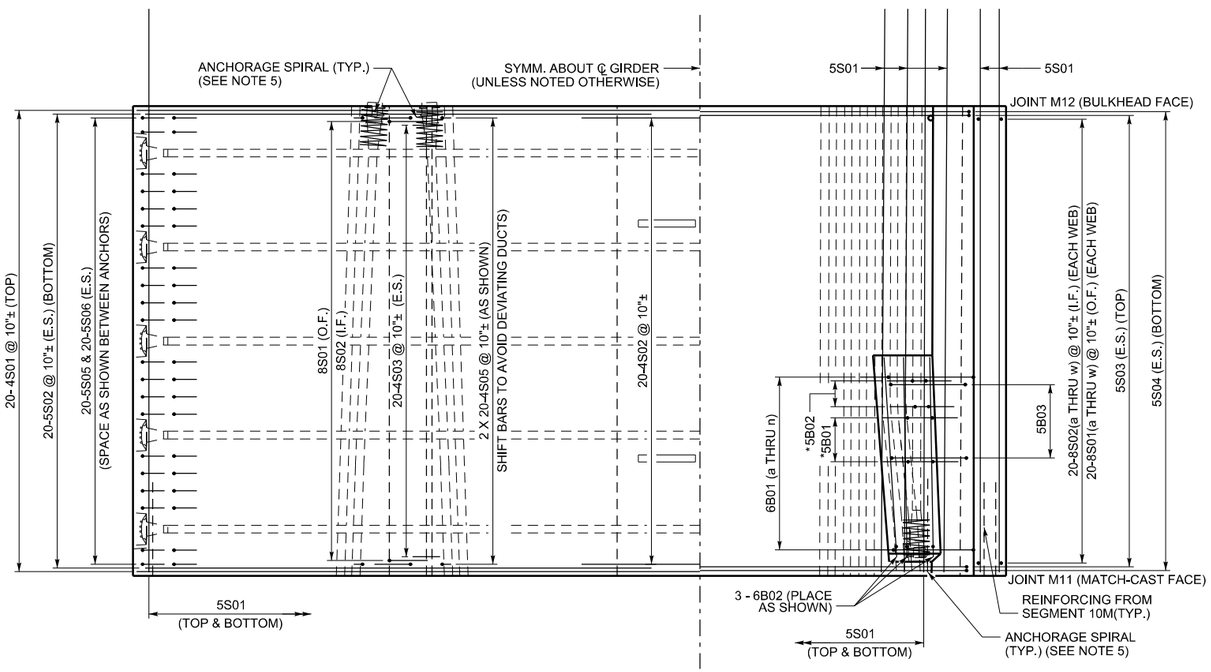
SECTION A-A
(ANCHOR BLOCK REINFORCING
NOT SHOWN FOR CLARITY)



DETAIL 'B'
(TYPICAL EACH BLOCK)



SECTION C-C
(TYPICAL EACH BLOCK)



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-11M, S2-11M, N3-11M AND S3-11M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

* 7. PLACE 5B01 AND 5B02 AROUND CURVED PORTION OF DUCT.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 11M REINFORCING I

PROJECT NUMBER: BRF-0191(58)129

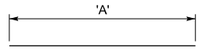
GRAND
COUNTY

F-763
DRG. NO.

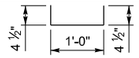
SHT. 180 OF 190

SEGMENT TYPE 11M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-11M, S2-11M, N3-11M AND S3-11M.

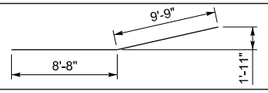
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"		39'-7"
4S02	TOP SLAB	4	20	8'-8"		8'-8"
4S03	TOP SLAB	4	40	2'-9"		2'-9"
5S01	SEGMENT	5	156	19'-9 1/2"		19'-9 1/2"



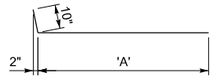
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



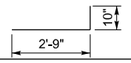
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



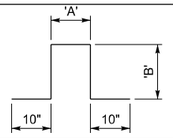
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40			
5S04	BOTTOM SLAB	5	40			
5S06	TOP SLAB	5	40			



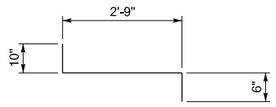
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



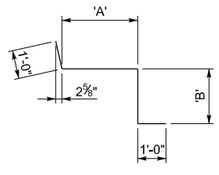
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
5B01	ANCHOR BLOCK	5	8	4'-4"	34'-8"	1'-0"	0'-10"
5B02	ANCHOR BLOCK	5	6	3'-5 ¼"	20'-7 ½"	0'-7 ¼"	0'-7"



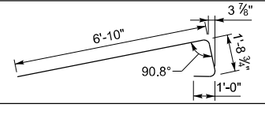
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5B03	ANCHOR BLOCK	5	14	4'-1"	57'-2"



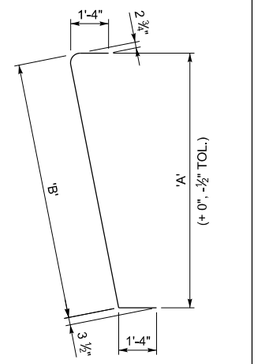
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
6B01a	ANCHOR BLOCK	6	2	6'-7 ¾"	13'-3 ½"	2'-9 ½"	1'-10 ⅝"
6B01b	ANCHOR BLOCK	6	2	6'-6 ½"	13'-1"	2'-9 ⅜"	1'-9 ⅛"
6B01c	ANCHOR BLOCK	6	2	6'-5 ¼"	12'-10 ½"	2'-9 ⅜"	1'-7 ⅝"
6B01d	ANCHOR BLOCK	6	2	6'-4"	12'-8"	2'-9 ⅛"	1'-6 ⅛"
6B01e	ANCHOR BLOCK	6	2	6'-2 ⅝"	12'-5 ¼"	2'-10 ⅛"	1'-4 ½"
6B01f	ANCHOR BLOCK	6	2	6'-1 ⅜"	12'-2 ¾"	2'-10 ⅜"	1'-3"
6B01g	ANCHOR BLOCK	6	2	6'-0 ⅛"	12'-0 ¼"	2'-10 ⅝"	1'-1 ½"
6B01h	ANCHOR BLOCK	6	2	5'-11"	11'-10"	2'-11"	1'-0"
6B01k	ANCHOR BLOCK	6	2	5'-9 ⅝"	11'-7 ¼"	2'-11 ¼"	0'-10 ⅜"
6B01m	ANCHOR BLOCK	6	2	5'-8 ⅜"	11'-4 ¾"	2'-11 ½"	0'-8 ⅞"
6B01n	ANCHOR BLOCK	6	2	5'-7 ⅛"	11'-2 ¼"	2'-11 ¾"	0'-7 ⅜"



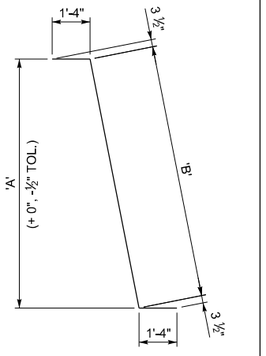
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
6B02	ANCHOR BLOCK	6	6	9'-6 ¾"	57'-4 ½"

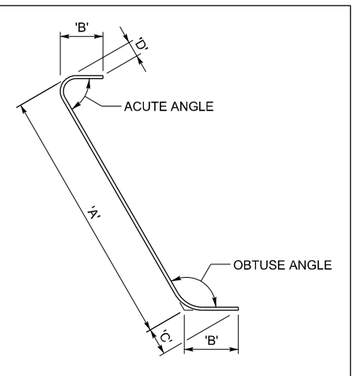


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2				
8S01b	1	WEBS	8	2				
8S01c	1	WEBS	8	2				
8S01d	2	WEBS	8	2				
8S01e	2	WEBS	8	2				
8S01f	2	WEBS	8	2				
8S01g	3	WEBS	8	2				
8S01h	3	WEBS	8	2				
8S01j	3	WEBS	8	2				
8S01k	4	WEBS	8	2				
8S01m	4	WEBS	8	2				
8S01n	4	WEBS	8	2				
8S01p	5	WEBS	8	2				
8S01q	5	WEBS	8	2				
8S01r	5	WEBS	8	2				
8S01s	6	WEBS	8	2				
8S01t	6	WEBS	8	2				
8S01u	6	WEBS	8	2				
8S01v	7	WEBS	8	2				
8S01w	7	WEBS	8	2				



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2				
8S02b	1	WEBS	8	2				
8S02c	1	WEBS	8	2				
8S02d	2	WEBS	8	2				
8S02e	2	WEBS	8	2				
8S02f	2	WEBS	8	2				
8S02g	3	WEBS	8	2				
8S02h	3	WEBS	8	2				
8S02j	3	WEBS	8	2				
8S02k	4	WEBS	8	2				
8S02m	4	WEBS	8	2				
8S02n	4	WEBS	8	2				
8S02p	5	WEBS	8	2				
8S02q	5	WEBS	8	2				
8S02r	5	WEBS	8	2				
8S02s	6	WEBS	8	2				
8S02t	6	WEBS	8	2				
8S02u	6	WEBS	8	2				
8S02v	7	WEBS	8	2				
8S02w	7	WEBS	8	2				





REINFORCING BAR DETAILING

LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK; D - DEVIATOR; S - SEGMENT
- 5 — BAR SIZE

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 11M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	8,890
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	51.3
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-11M, S2-11M, N3-11M AND S3-11M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	
DRAWN	SJF	02/08	
QUANT.	BTL	08/08	
CHECK	DSL	08/08	
CHECK	BTL	02/08	
CHECK	KRM	08/08	

SENIOR DESIGN ENGR. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVAL RECOMM. — DATE
APPROVED FOR USE BY UDOT — DATE

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 11M REINFORCING II
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 181 OF 190

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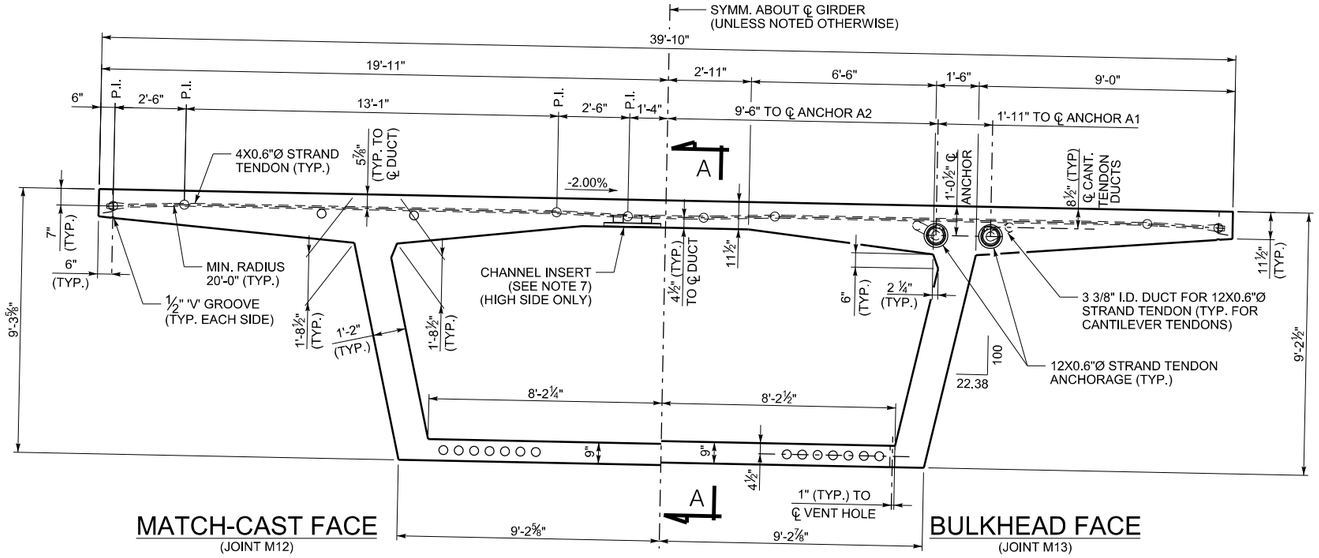
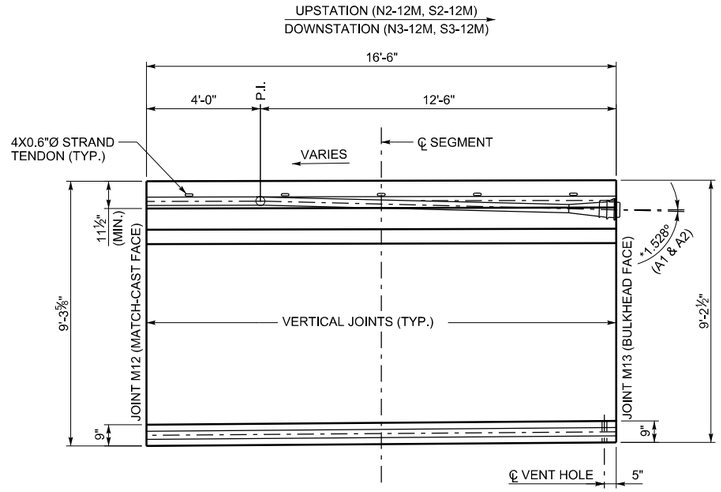
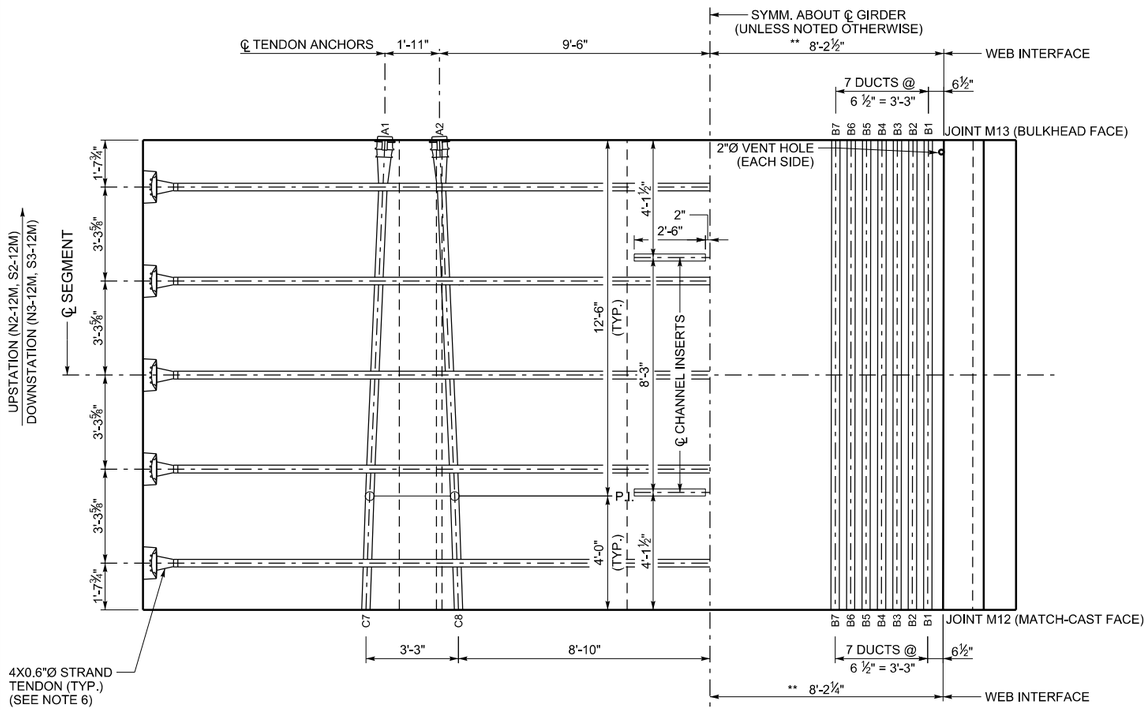


CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)

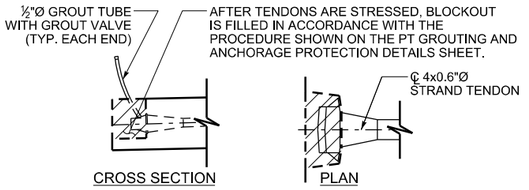


SECTION A-A
(ANGLES SHOWN WITH RESPECT TO TOP OF DECK GRADE)



PARTIAL PLAN TOP SLAB

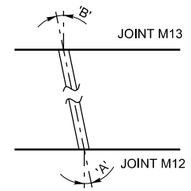
PARTIAL PLAN BOTTOM SLAB
(** MEASURED ALONG BOTTOM SLAB)



TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
- B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M12 DUCT POSITION	'A'	JOINT M13 DUCT POSITION	'B'
C7	1.880°	A1	2.452°
C8	1.880°	A2	2.452°
B1 - B7	0°	B1 - B7	0°

NOTES:

1. THIS DRAWING VALID FOR SEGMENT N2-12M, S2-12M, N3-12M AND S3-12M.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. *POSITIVE ANGLE DENOTES TENDON DEVIATING TO UPPER POSITION NEGATIVE ANGLE DENOTES TENDON DEVIATING TO LOWER POSITION.
6. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
7. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
8. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
9. ALL LONGITUDINAL TOP AND BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 02/08 CHECK DSL 08/08
DRAWN SJF 02/08 CHECK BTL 02/08
QUANT. BTL 08/08 CHECK KRM 08/08

APPROVAL RECOMM. DATE SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER
BRIDGE - MOAB UTAH
SEGMENT 12M DIMS & PT DETAILS

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 182 OF 190

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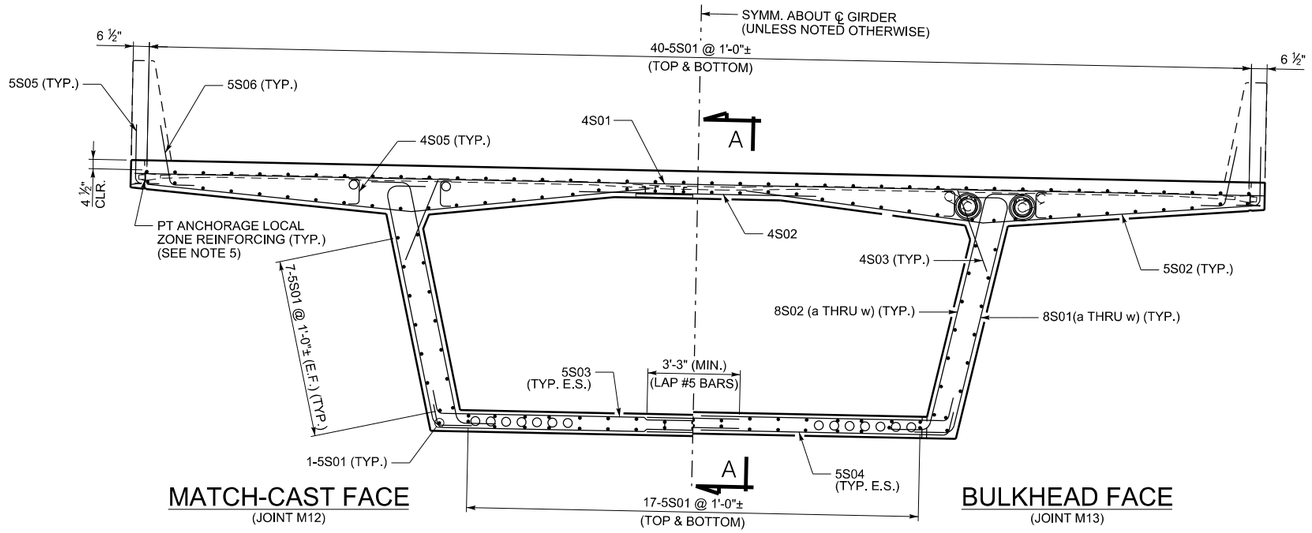
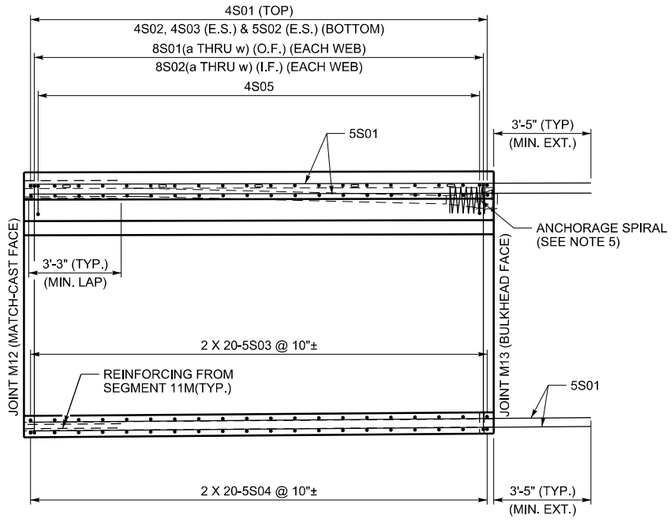
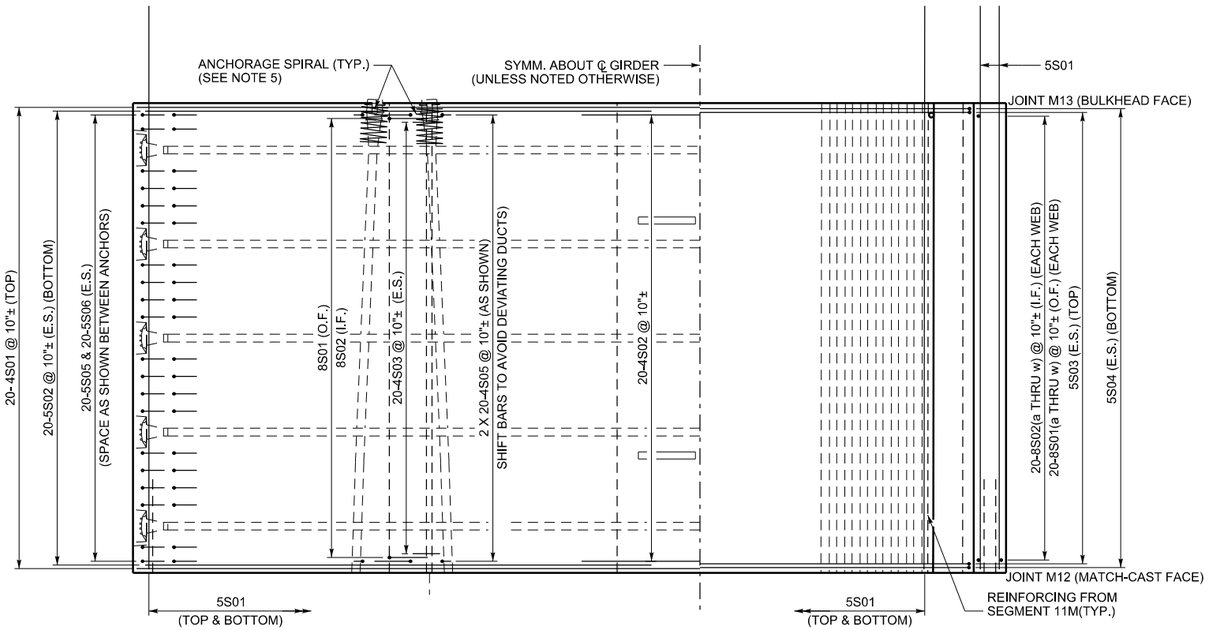


CROSS SECTION



SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-12M, S2-12M, N3-12M AND S3-12M.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 12M REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 183 OF 190

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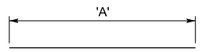
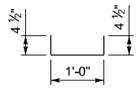
SEGMENT TYPE 12M BAR BENDING SCHEDULE - VALID FOR SEGMENTS N2-12M, S2-12M, N3-12M AND S3-12M.

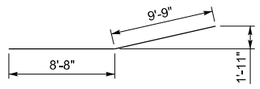
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	20	39'-7"		39'-7"
4S02	TOP SLAB	4	20	8'-8"		8'-8"
4S03	TOP SLAB	4	40	2'-9"		2'-9"
5S01	SEGMENT	5	144	19'-9 1/2"		19'-9 1/2"



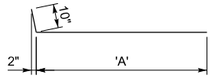
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
4S05	TOP SLAB	4	80	1'-9"	140'-0"



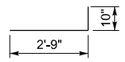
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	40	18'-5"	736'-8"



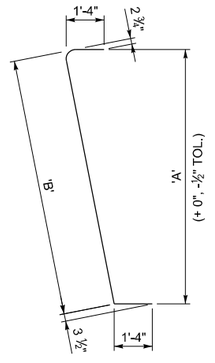
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	40			
5S04	BOTTOM SLAB	5	40			
5S06	TOP SLAB	5	40			



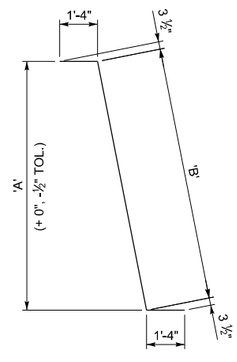
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	40	3'-7"	143'-4"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01a	1	WEBS	8	2				
8S01b	1	WEBS	8	2				
8S01c	1	WEBS	8	2				
8S01d	1	WEBS	8	2				
8S01e	2	WEBS	8	2				
8S01f	2	WEBS	8	2				
8S01g	2	WEBS	8	2				
8S01h	2	WEBS	8	2				
8S01j	3	WEBS	8	2				
8S01k	3	WEBS	8	2				
8S01m	3	WEBS	8	2				
8S01n	3	WEBS	8	2				
8S01p	4	WEBS	8	2				
8S01q	4	WEBS	8	2				
8S01r	4	WEBS	8	2				
8S01s	4	WEBS	8	2				
8S01t	5	WEBS	8	2				
8S01u	5	WEBS	8	2				
8S01v	5	WEBS	8	2				
8S01w	5	WEBS	8	2				



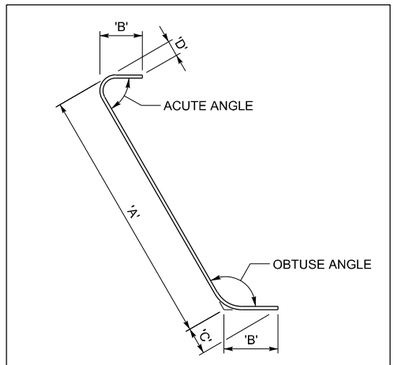
MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02a	1	WEBS	8	2				
8S02b	1	WEBS	8	2				
8S02c	1	WEBS	8	2				
8S02d	1	WEBS	8	2				
8S02e	2	WEBS	8	2				
8S02f	2	WEBS	8	2				
8S02g	2	WEBS	8	2				
8S02h	2	WEBS	8	2				
8S02j	3	WEBS	8	2				
8S02k	3	WEBS	8	2				
8S02m	3	WEBS	8	2				
8S02n	3	WEBS	8	2				
8S02p	4	WEBS	8	2				
8S02q	4	WEBS	8	2				
8S02r	4	WEBS	8	2				
8S02s	4	WEBS	8	2				
8S02t	5	WEBS	8	2				
8S02u	5	WEBS	8	2				
8S02v	5	WEBS	8	2				
8S02w	5	WEBS	8	2				



LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 5 — BAR SIZE



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE SEGMENT TYPE 12M		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	8,241
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	50.4
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	575

NOTES:

1. THIS DRAWING VALID FOR SEGMENTS N2-12M, S2-12M, N3-12M AND S3-12M.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. ____ DATE ____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT ____ DATE ____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
SEGMENT 12M REINFORCING II

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 184 OF 190

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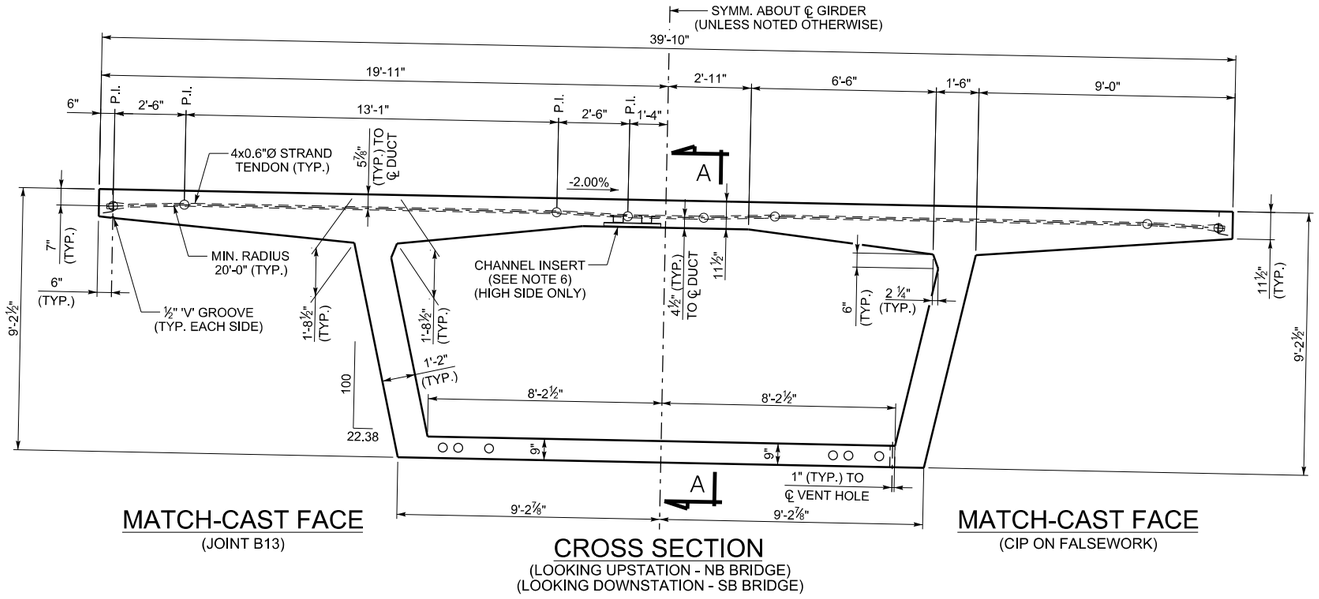
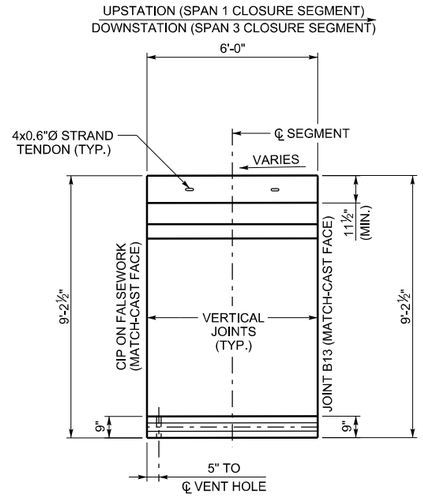
$$date$$

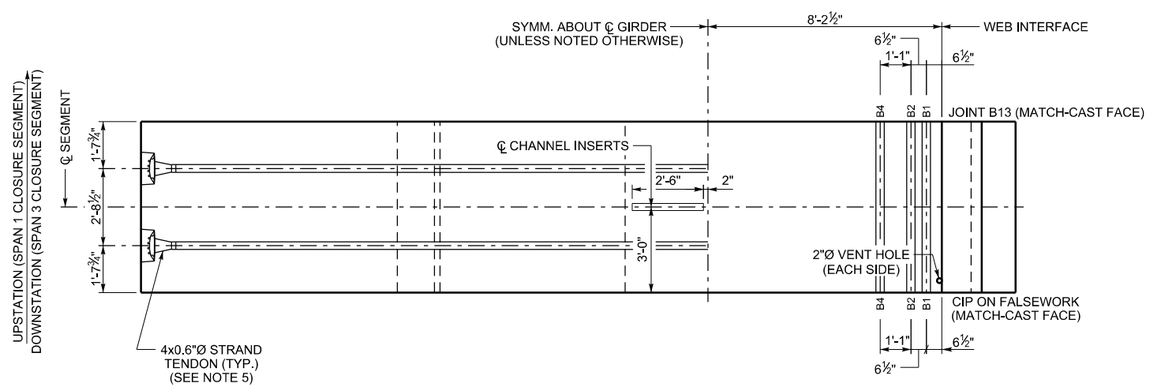


CROSS SECTION

(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION - SB BRIDGE)

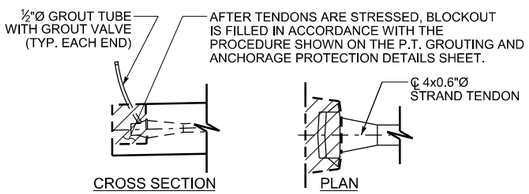


SECTION A-A



PARTIAL PLAN TOP SLAB

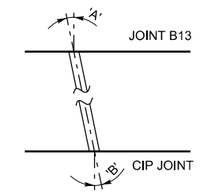
PARTIAL PLAN BOTTOM SLAB



TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
  B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

(ANGLES SHOWN ARE IN PLANE PARALLEL TO TOP SLAB)

DUCT DEVIATIONS			
JOINT B13 DUCT POSITION	'A'	CIP JOINT DUCT POSITION	'B'
B1-B4	0°	B1-B4	0°

NOTES:

1. THIS DRAWING VALID FOR SPAN 1 & 3 CLOSURE SEGMENTS.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER, STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
6. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
7. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT QUANT. & STRESSING SCHEDULE SHEET & PT GROUTING AND PROTECTION DET. SHEET.
8. ALL LONGITUDINAL BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

NO.	DATE	BY	REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	04/08	CHECK DSL 08/08
DRAWN	KJM	04/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

DESIGNED: SENIOR DESIGN ENGR. — DATE
APPROVAL RECOMM.: UDOT BRIDGE ENGR. — DATE
APPROVED FOR USE BY UDOT

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
BS CLOSURE DIMS & PT DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 185 OF 190

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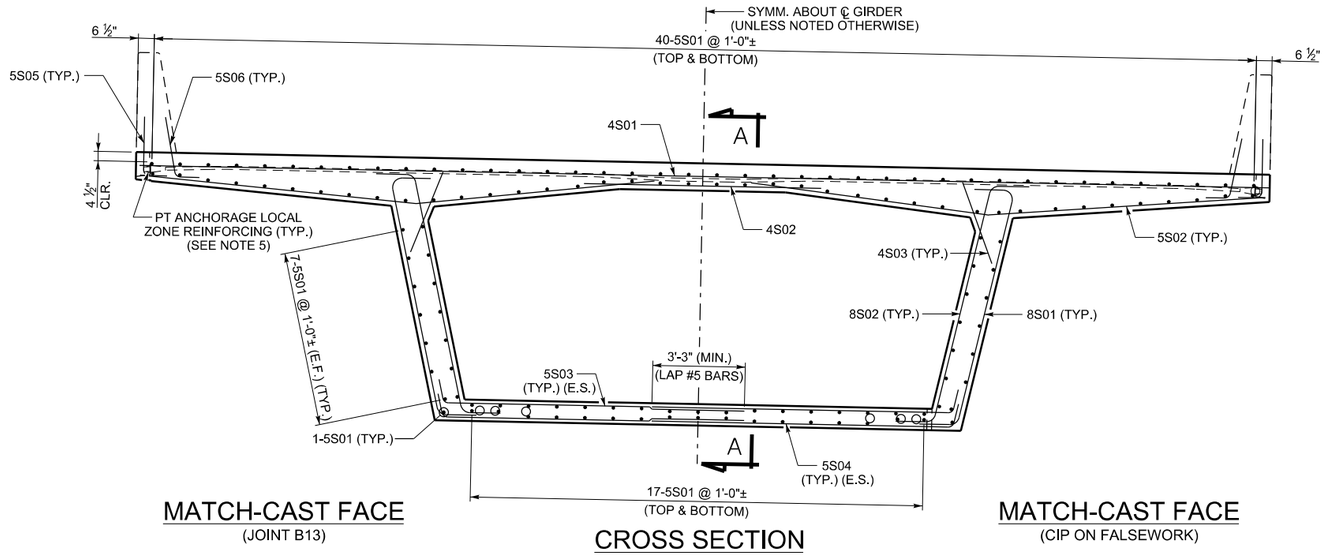

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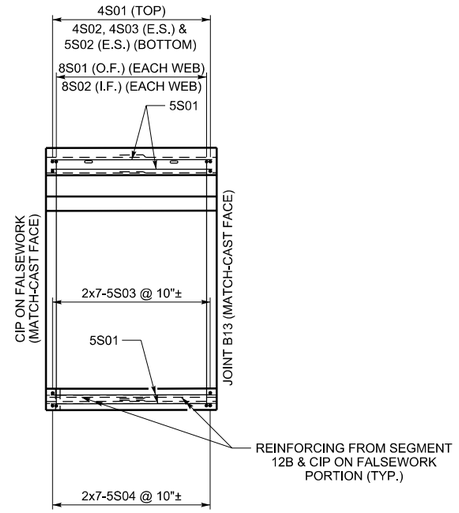
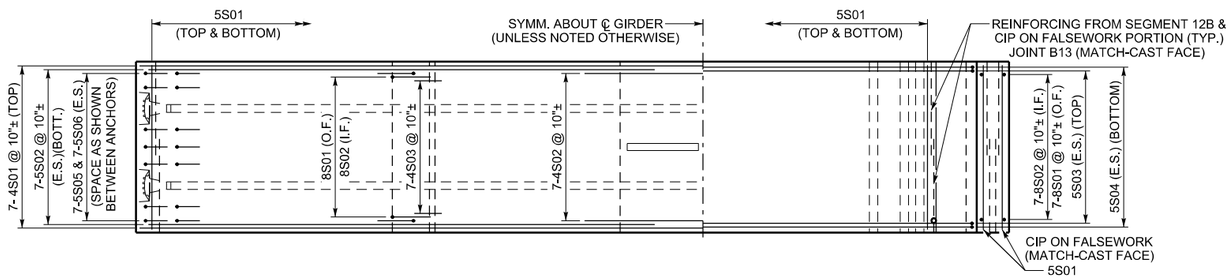


SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SPAN 1 & 3 CLOSURE SEGMENTS.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHEIVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	04/08	CHECK DSL 08/08
DRAWN	KJM	04/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
BS CLOSURE REINFORCING I
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

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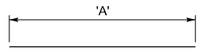
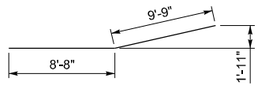
$$finish
$$closeout

SPAN 1 & 3 CLOSURE SEGMENT BAR BENDING SCHEDULE

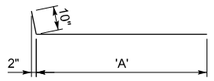
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	7	39'-7"	277'-1"	39'-7"
4S02	TOP SLAB	4	7	8'-8"	60'-8"	8'-8"
4S03	TOP SLAB	4	7	2'-9"	19'-3"	2'-9"
5S01	SEGMENT	5	144	5'-8"	816'-0"	5'-9"



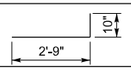
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	14	18'-5"	257'-10"



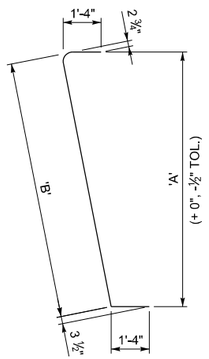
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	14	11'-8 1/2"	163'-11"	10'-10 1/2"
5S04	BOTTOM SLAB	5	14	11'-7 1/8"	162'-3 3/4"	10'-9 1/8"
5S06	TOP SLAB	5	14	3'-7"	50'-2"	2'-9"



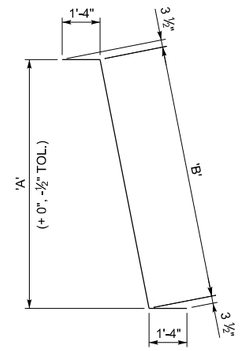
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	14	3'-7"	50'-2"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01	1	WEBS	8	14	11'-5 1/2"	160'-5"	8'-7 7/8"	8'-9 1/2"

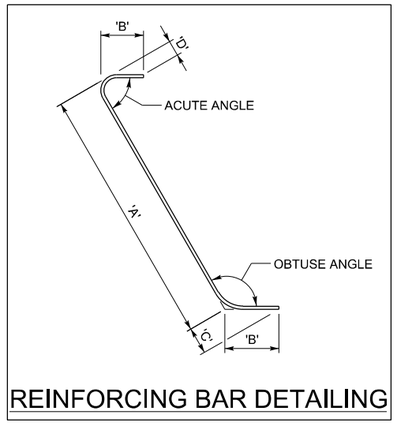


MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02	1	WEBS	8	14	11'-6 1/4"	161'-3 1/2"	8'-7 7/8"	8'-10 1/4"



LEGEND

5 S 01
- 5 — BAR SIZE
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 01 — BAR NUMBER



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE BACKSPAN CLOSURE SEGMENT		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	2,662
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	18.3
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	230

NOTES:

1. THIS DRAWING VALID FOR SPAN 1 & 3 CLOSURE SEGMENTS.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 04/08 | CHECK DSL 08/08
DRAWN KJM 04/08 | CHECK BTL 02/08
QUANT. BTL 08/08 | CHECK KRM 08/08

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
BS CLOSURE REINFORCING II

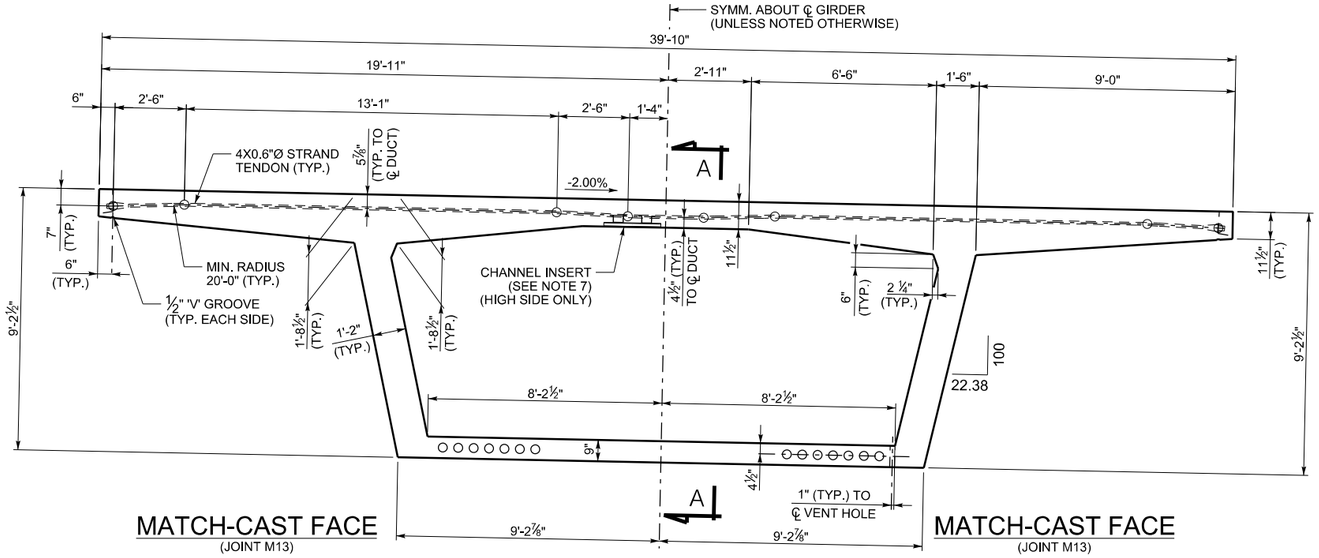
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

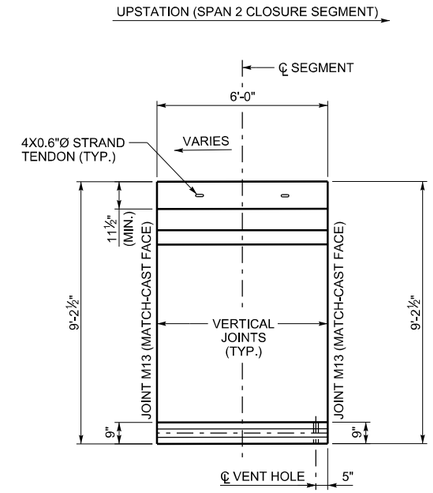
F-763
DRG. NO.

SHT. 187 OF 190

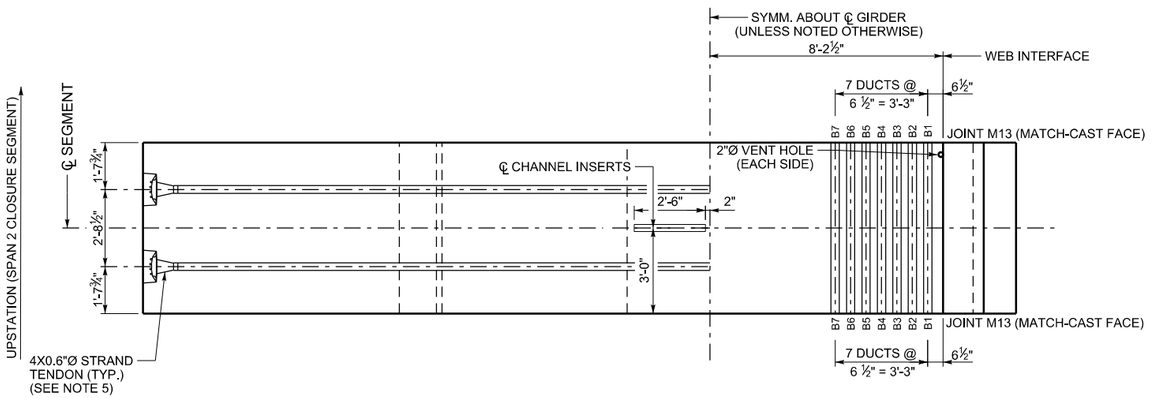
$$date$$ $$file$$



CROSS SECTION
(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)

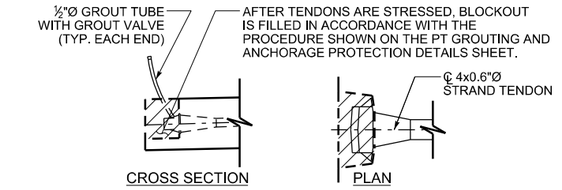


SECTION A-A



PARTIAL PLAN TOP SLAB

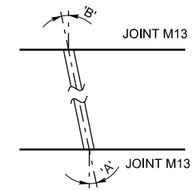
PARTIAL PLAN BOTTOM SLAB



TRANSVERSE TENDON BLOCKOUT DETAIL

C 23
- 23 — JOINT FACE DUCT POSITION
- C - CANTILEVER DUCT
- B - BOTTOM SLAB DUCT

DUCT LEGEND



DUCT DEVIATION SCHEMATIC

DUCT DEVIATIONS			
JOINT M13 DUCT POSITION	'A'	JOINT M13 DUCT POSITION	'B'
B1 - B7	0°	B1 - B7	0°

NOTES:

1. THIS DRAWING VALID FOR SPAN 2 CLOSURE SEGMENTS.
2. ALL TRANSVERSE DIMENSIONS ARE MEASURED ALONG SLOPE OF DECK.
3. FOR BULKHEAD DETAILS, SEE BULKHEAD DETAILS SHEET.
4. SEGMENT CONCRETE IS STRUCTURAL CONCRETE AA(B6)(AE), 6000 PSI.
5. AFTER THE CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, AND PRIOR TO RELEASING FORMWORK OR ADVANCING FORM TRAVELER. STRESS TRANSVERSE 0.6"Ø STRANDS TO 44 KIPS EACH. THE TENDONS ARE SINGLE END STRESSED FROM ALTERNATING SIDES OF THE DECK.
6. PROVIDE GALVANIZED OR STAINLESS STEEL CHANNEL INSERTS WITH AN ALLOWABLE CAPACITY OF 1500 LBS/FT. CHANNEL INSERTS ARE INCIDENTAL TO STRUCTURAL CONCRETE AA(B6)(AE).
7. FOR LONGITUDINAL PT STRESSING AND GROUTING DETAILS, SEE LONGITUDINAL PT LAYOUT SHEETS, PT SCHEDULE SHEETS AND PT GROUTING AND ANCHORAGE PROTECTION SHEET.
8. ALL LONGITUDINAL BOTTOM SLAB TENDONS ARE 12x0.6"Ø STRAND TENDONS. PROVIDE 12'-0" MINIMUM DUCT RADIUS IN THE TRUE 3D PLANE OF THE DUCT CURVE.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN BTL 02/08 | CHECK DSL 08/08
DRAWN SJF 02/08 | CHECK BTL 02/08
QUANT. BTL 08/08 | CHECK KRM 08/08

SENIOR DESIGN ENGR. — DATE
APPROVAL RECOMM. — DATE
UDOT BRIDGE ENGR. — DATE
APPROVED FOR USE BY UDOT — DATE

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
MS CLOSURE DIMS & PT DETAILS

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 188 OF 190

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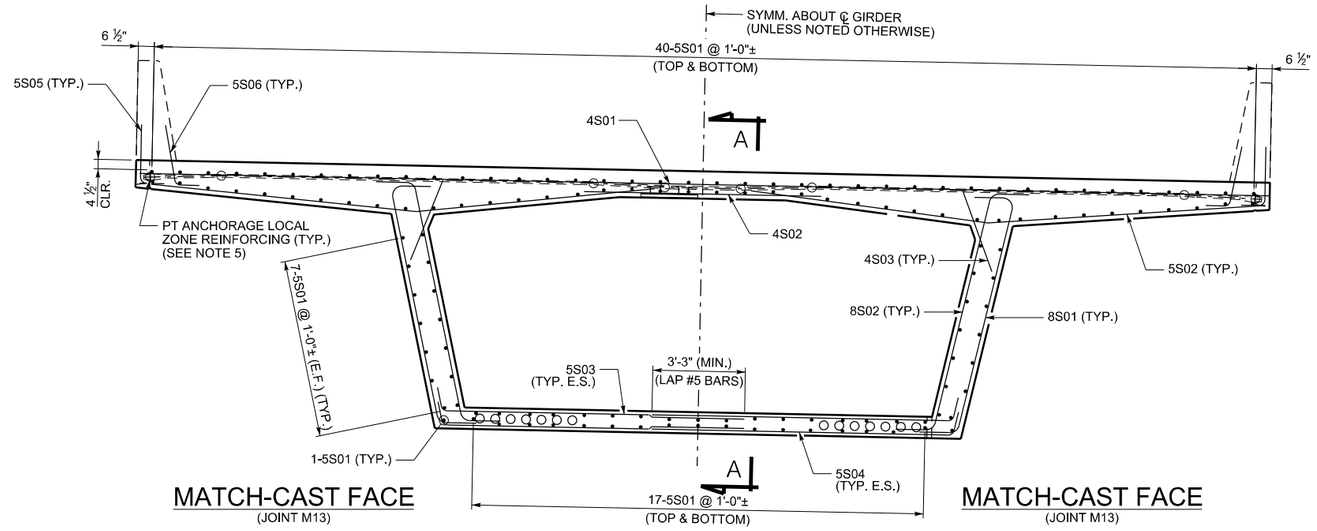
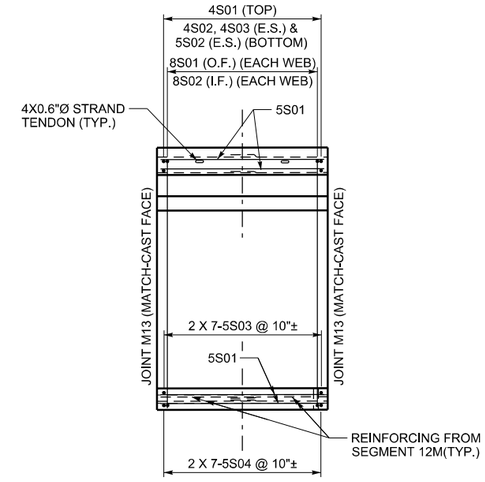
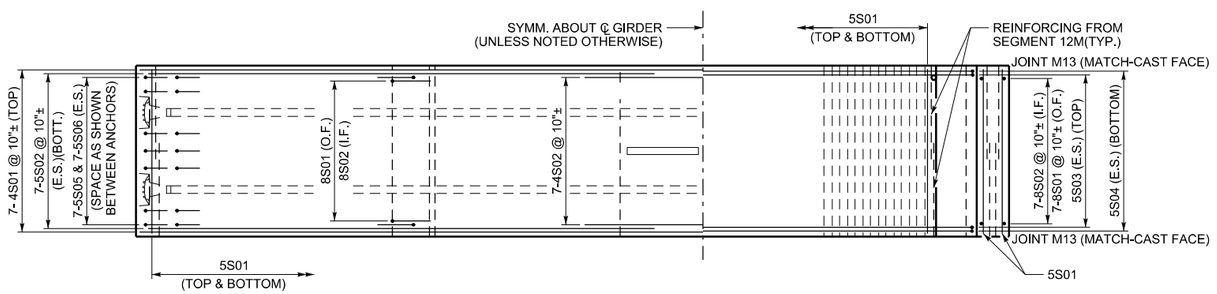


CROSS SECTION

(LOOKING UPSTATION - NB BRIDGE)
(LOOKING DOWNSTATION -SB BRIDGE)



SECTION A-A



PARTIAL PLAN TOP SLAB

PARTIAL PLAN BOTTOM SLAB

NOTES:

1. THIS DRAWING VALID FOR SPAN 2 CLOSURE SEGMENTS.
2. SPACE ALL REINFORCING BARS TO CLEAR POST-TENSIONING DUCTS.
3. CONCRETE COVER:
   4 ½" - TOP OF DECK
   1 ½" - ALL OTHER SURFACES
4. ALL REINFORCING STEEL IS EPOXY COATED.
5. FOR TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
6. THE SYMBOL ± DENOTES BARS THAT CAN BE SHIFTED ± 2" TO AVOID OTHER REINFORCING OR POST-TENSIONING HARDWARE, OR TO ACHIEVE EQUAL SPACING FROM FIRST TO LAST BAR.

NO.	DATE	BY	REVISIONS REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08	CHECK DSL 08/08
DRAWN	SJF	02/08	CHECK BTL 02/08
QUANT.	BTL	08/08	CHECK KRM 08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
MS CLOSURE REINFORCING I

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

F-763
DRG. NO.

SHT. 189 OF 190

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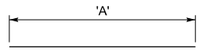
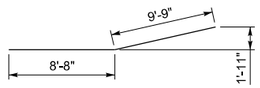
MAINSPAN CLOSURE SEGMENT BAR BENDING SCHEDULE

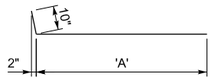
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
4S01	TOP SLAB	4	7	39'-7"		39'-7"
4S02	TOP SLAB	4	7	8'-8"		8'-8"
4S03	TOP SLAB	4	7	2'-9"		2'-9"
5S01	SEGMENT	5	144	5'-8"		5'-9"



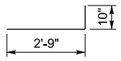
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S02	TOP SLAB	5	14	18'-5"	257'-10"



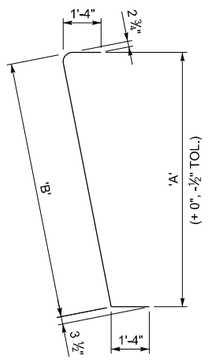
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'
5S03	BOTTOM SLAB	5	14			
5S04	BOTTOM SLAB	5	14			
5S06	TOP SLAB	5	14			



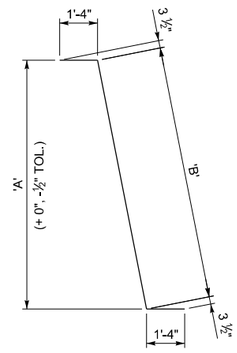
MARK	LOCATION	SIZE	NUM	LENGTH	TOTAL
5S05	TOP SLAB	5	14	3'-7"	50'-2"



MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S01	1	WEBS	8	14				



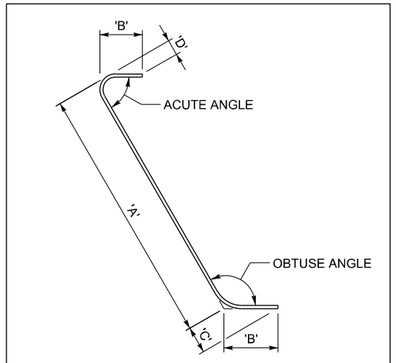
MARK	GROUP	LOCATION	SIZE	NUM	LENGTH	TOTAL	'A'	'B'
8S02	1	WEBS	8	14				



LEGEND

5 S 01

- 01 — BAR NUMBER
- S — B - ANCHOR BLOCK, D - DEVIATOR, S - SEGMENT
- 5 — BAR SIZE



REINFORCING BAR DETAILING

ESTIMATED QUANTITIES - ONE MAINSAPN CLOSURE SEGMENT		
ITEM DESCRIPTION:	UNIT	QUANTITY
REINFORCING STEEL - COATED (PLAN QUANTITY)	LB	2,662
STRUCTURAL CONCRETE AA(B6)(AE) (FOR INFORMATION ONLY)	CY	18.3
POST-TENSIONING STEEL STRAND (TRANSVERSE) (PLAN QUANTITY)	LB	230

NOTES:

1. THIS DRAWING VALID FOR MAINSPAN CLOSURE SEGMENTS.
2. ALL REINFORCING STEEL IS EPOXY COATED.
3. PROVIDE BAR BENDS IN ACCORDANCE WITH CRSI. PROVIDE BEND TOLERANCES AS REQUIRED FOR CONSTRUCTION OR AS SHOWN ABOVE FOR BARS 8S01& 8S02.
4. FOR PT ANCHORAGE SPIRAL AND TRANSVERSE LOCAL ZONE REINFORCING, SEE PT QUANT. & STRESSING SCHEDULE SHEET.
5. STRUCTURAL CONCRETE VOLUME IS GIVEN AS INFORMATION ONLY. STRUCTURAL CONCRETE IS PAID LUMP SUM.

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN	BTL	02/08
DRAWN	SJF	02/08
QUANT.	BTL	08/08
CHECK	DSL	08/08
CHECK	BTL	02/08
CHECK	KRM	08/08

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
MS CLOSURE REINFORCING II

PROJECT NUMBER BRF-0191(58)129

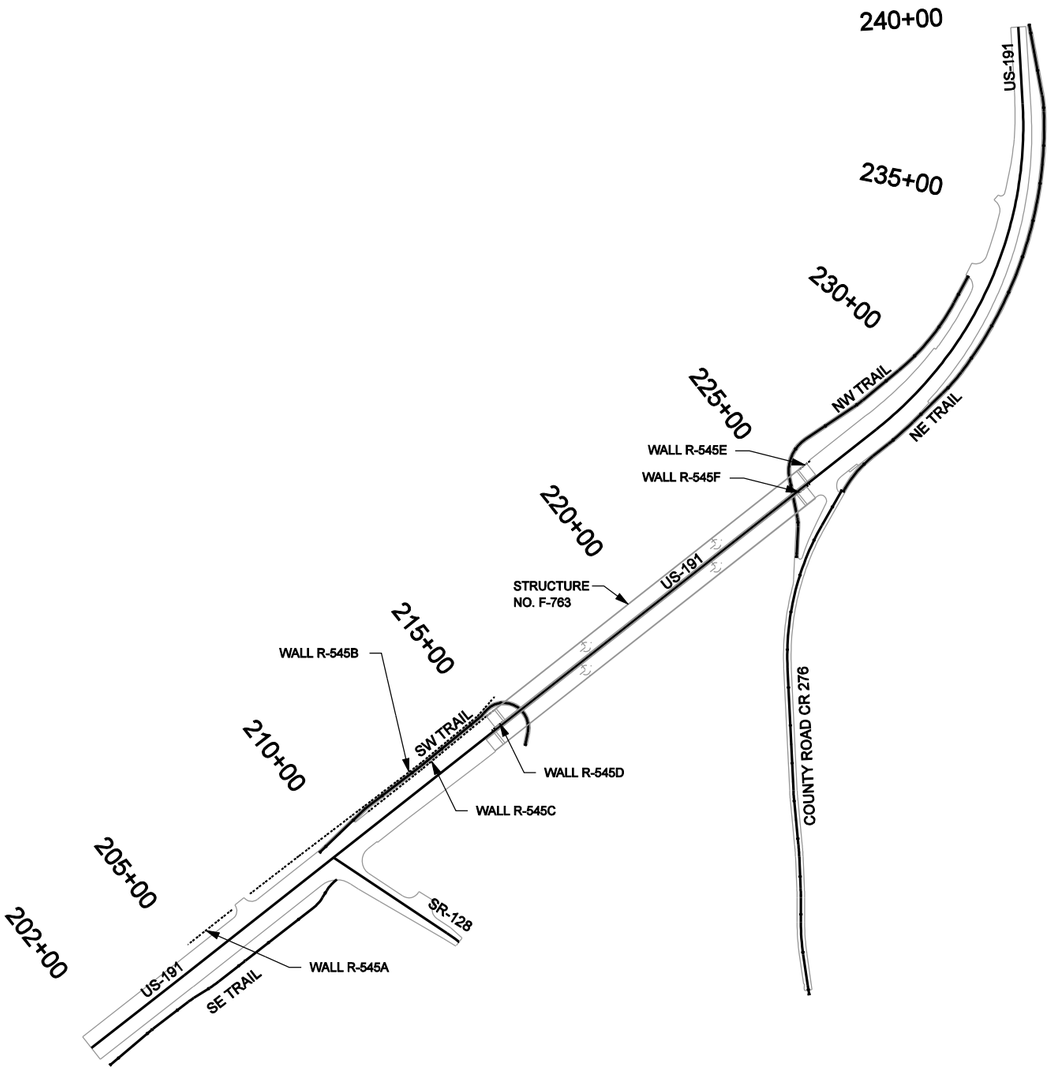
GRAND COUNTY

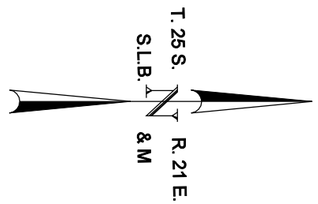
F-763 DRG. NO.

SHT. 190 OF 190

$efiles
$dcnotes

MSE WALL R-545 SITUATION AND LAYOUT SHEET





GENERAL NOTES

1. USE COATED DEFORMED CARBON REINFORCING BARS CONFORMING TO AASHTO M284 OR M111 AND M31 GRADE 60 FOR ALL REINFORCING STEEL.
2. CHAMFER ALL EXPOSED CONCRETE CORNERS 3/4" EXCEPT WHERE NOTED OTHERWISE.
3. PROVIDE 2" OF CONCRETE COVER TO REINFORCING STEEL EXCEPT WHERE NOTED OTHERWISE.
4. USE CLASS AA(AE) CAST-IN-PLACE CONCRETE EXCEPT WHERE NOTED OTHERWISE.
5. USE CLASS 3A (AE) CONCRETE FOR WALL FACING PANELS.
6. USE CLASS B CONCRETE FOR LEVELING PAD UNLESS OTHERWISE NOTED.
7. USE MSE SELECT BACKFILL IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 02832S.
8. SUBMIT WALL FABRICATION PLANS PER SECTION 02831S. SEE WALL FABRICATION PLANS FOR ADDITIONAL WALL DETAILS.
9. SEE GEOTECHNICAL PLANS FOR SURCHARGE PRESSURES, DEPTHS AND LIMITS.

DESIGN DATA

DESIGN IN ACCORDANCE WITH CURRENT AASHTO LRFD AND INTERIM SPECIFICATIONS.

CAST-IN-PLACE CONCRETE: f'c = 4000 psi; fy (REINF.) = 60,000 psi; n = 8

WALL PANEL CONCRETE: f'c = 5000 psi; fy (REINF.) = 60,000 psi; n = 8

SEISMIC: AASHTO LRFD SEISMIC ZONE ?
A50 = 0.xx g (10% PE IN 50 YRS.) <—?
A250 = 0.xx g (10% PE IN 250 YRS.) <—?
SOIL PROFILE TYPE IV FOR WALLS LOCATED ...
SOIL PROFILE TYPE III FOR WALLS LOCATED ...

PRELIMINARY
NOT FOR CONSTRUCTION

INDEX OF SHEETS

1	GENERAL NOTES/LOCATION PLAN	
2-3	SOIL DATA	
4,5,6,7	MSE WALL R-545 TYPICAL SECTION SHEETS & DETAIL SHEETS	
8	R-545A	SITUATION & LAYOUT
9, 10	R-545B	SITUATION & LAYOUT
11	R-545C	SITUATION & LAYOUT
12	R-545D	SITUATION & LAYOUT
13	R-545E	SITUATION & LAYOUT
14	R-545F	SITUATION & LAYOUT

QUANTITIES

ITEM	ESTIMATED	UNIT	AS CONST.
MSE WALL (R-545A) (EST. QTY. 581 SQ. FT.)	1	LUMP	
MSE WALL (R-545B) (EST. QTY. 6131 SQ. FT.)	1	LUMP	
MSE WALL (R-545C) (EST. QTY. 3541 SQ. FT.)	1	LUMP	
MSE WALL (R-545D) (EST. QTY. 515 SQ. FT.)	1	LUMP	
MSE WALL (R-545E) (EST. QTY. 165 SQ. FT.)	1	LUMP	
MSE WALL (R-545F) (EST. QTY. 364 SQ. FT.)	1	LUMP	

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN CHECK
DRAWN CHECK
QUANT. CHECK

APPROVAL RECOMM. SENIOR DESIGN ENGR. DATE
APPROVED FOR USE BY UDOT UDOT BRIDGE ENGR. DATE

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
MSE WALL R-545 LOCATION PLAN
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
R-545 DRG. NO.
SHT. 1 OF 14

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8/6/2008

DRILL HOLE LOG

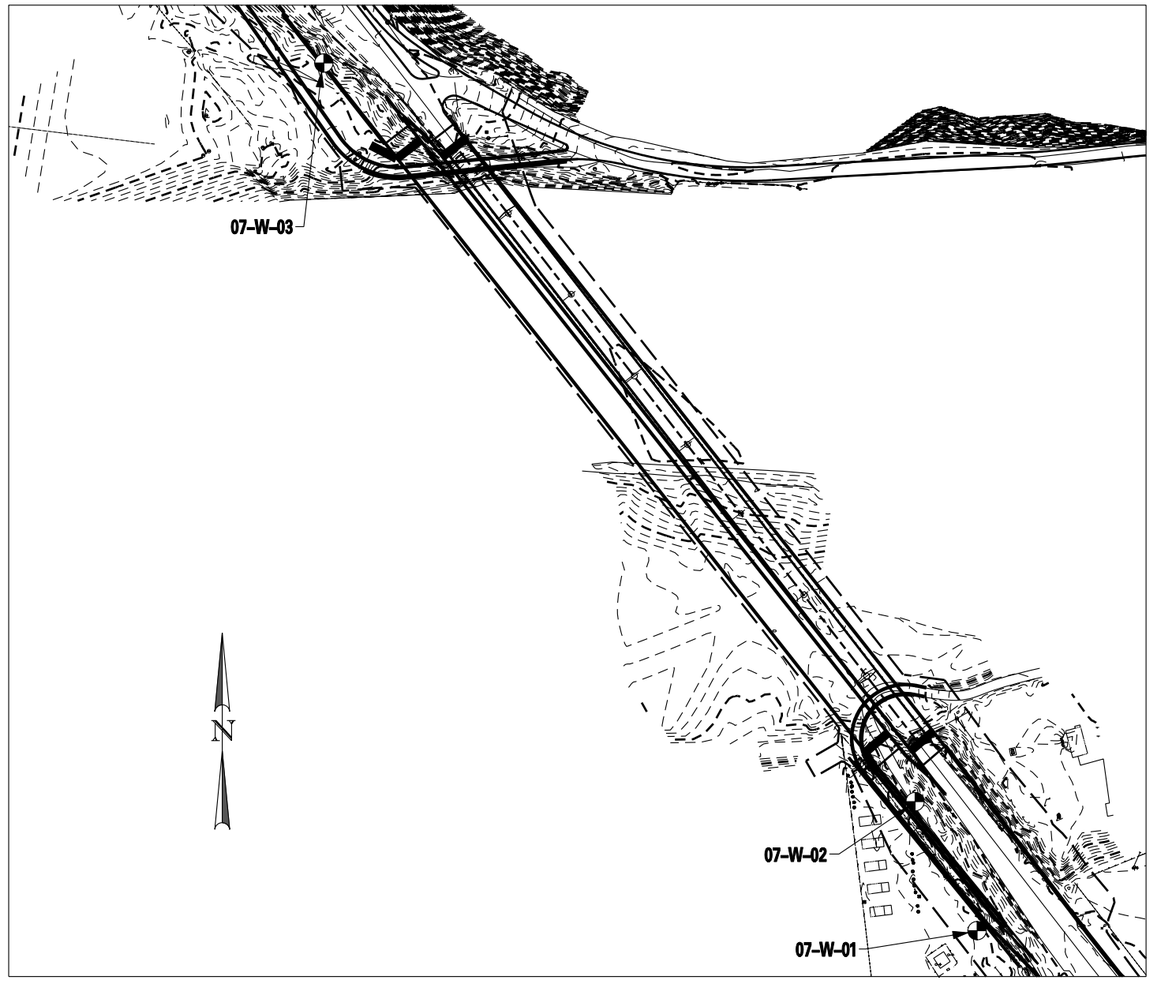
BORING NO. 07-W-01

SHEET 1 OF 1

PROJECT: US-191: OVER COLORADO RIVER BRIDGE
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: SEE SITE PLAN / STA. 212+61.74' LT. / N:200,331 E:99,534
DRILLING METHOD: CME-55 NO. 1 / N.W. CASING & N.Q. CORE
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 11.3' AFTER 24 HOURS: ▼ N.M.

PROJECT NUMBER: 200701.200
DATE STARTED: 11/30/07
DATE COMPLETED: 12/3/07
GROUND ELEVATION: 3972.0'
LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	See Legend	USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Unconfined Strength (psf)
3970	0		14	13,19,18,(79)		SM	brown, slightly moist, dense — SILTY SAND W/GRAVEL								
			13	4,4,3,(15)		SM (A-2-4(0))	red-brown, slightly moist, loose		6.3		NP	5	67	28	
	5						SILTY SAND few random clay lenses								
			14	4,4,5,(19)		SM	red-brown, slightly moist, loose								
3965						SM	red-brown, moist								
			6	4,2,2,(7)		CL	green-gray, moist								
	10						LEAN CLAY								
3960			16	Pushed 0.14		CL (A-6(10))	brown, very moist, soft	102	23	27	13	0	9	91	7
			16	Pushed 0.09		CL (A-4(6))	gray-brown, very moist, very soft — LEAN CLAY W/SAND		27	30	9	0	23	77	
	15		14	0/18",(0) 0.04		CL-ML	gray-brown, wet, very soft — SANDY SILTY CLAY								
3955			7	8,12,22,(47)		GP-GM	brown, wet, med. dense — GRAVEL W/SILT & SAND								
	20						CLAYSTONE (LEAN CLAY W/GRAVEL)								
3950			11	21,19,23		CL (A-4(2))	red to purple-brown, hard — very highly weathered		11.8	24	8	18	23	59	
	25		25	Core 70,30		-	red-brown, ext. soft rock to soft rock	132.8	9.6						150
3945															
	30		10	Core 16,0		-	red-brown, ext. soft rock — CLAYSTONE (LEAN CLAY W/GRAVEL) highly weathered, most of sample washing away, occasional thin siltstone layers								
3940			13	4,8,9 0.55		CL (A-4(3))	red-brown, ext. soft rock/stiff soil		14.6	24	10	20	21	59	
	35		6	Core 17,0		-	red-brown, ext. soft rock/stiff soil								
3935			8	4,4,7		GC (A-2-4(0))	brown-purple, ext. soft rock/very loose soil		10.5	23	9	46	22	32	
	40		10	Core 20,0		-	red-brown, ext. soft rock — CLAYSTONE (CLAYEY GRAVEL)								
3930			7	7,4,5 0.65		-	brown-purple, ext. soft rock/very loose soil								
	45		0	Core 0,0		-	no recovery								
3925			6	56/6" 0.70		-	dk. gray — SHALEY MUDSTONE								

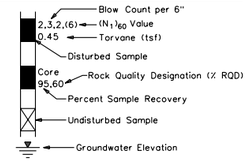


EXPLORATION LOCATION PLAN

100' 0 100' 200'

KEY TO BORING LOG

SYMBOLS



RELATIVE DENSITY (NON-PLASTIC - SAND & SILT)

VERY LOOSE N<4
LOOSE N 4-10
MED DENSE N 10-30
DENSE N 30-50
VERY DENSE N>50

CONSISTENCY (PLASTIC - SILT & CLAY)

VERY SOFT N<2
SOFT N 2-4
MEDIUM STIFF N 4-8
STIFF N 8-15
VERY STIFF N 15-30
HARD N>30

GENERAL NOTES

1. THE SUBSURFACE EXPLORATION SHOWN WAS CONDUCTED BETWEEN 11-30-07 AND 12-03-07 BY RB&G ENGINEERING, INC..
2. THESE BORING LOGS REPRESENT A SYNOPSIS OF THE SOIL DEPOSITS ENCOUNTERED WITHIN EACH BORING AND ARE BASED ON SOUND GEOLOGICAL AND ENGINEERING JUDGMENT. BECAUSE SOIL IS A COMPLEX MEDIUM, THESE BORING LOGS MAY OR MAY NOT REPRESENT THE SOIL CONDITIONS AT THIS SITE. THIS SUBSURFACE INTERPRETATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION AND JUDGEMENT OF THE CONTRACTOR.
3. THE WATER LEVELS AND CONDITIONS INDICATED ON THE BORING LOGS REPRESENT HOLE CONDITIONS ON THE DATE SHOWN. HOWEVER, IT SHOULD BE NOTED, THAT AT LOCATIONS AWAY FROM THE BORINGS OR AT ANOTHER TIME THE WATER LEVELS AND CONDITIONS MAY VARY SIGNIFICANTLY.
4. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.
5. COBBLE - A ROCK WITH AN AVERAGE DIMENSION BETWEEN 3 INCHES AND 12 INCHES
6. BOULDER - A ROCK WITH AN AVERAGE DIMENSION OF 12 INCHES OR GREATER

NOTE: DRILL RIG USED - CME-55 NO. 1
HAMMER E=0.75

GEOTECHNICAL ENGINEER

REVISIONS

NO.	DATE	BY	REMARKS
-	-	-	-

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN MNH 12/07 CHECK SRJ 1/08
DRAWN JPN 2/08 CHECK SRJ 2/08
QUANT. - - CHECK - -

APPROVAL RECOMM. — SENIOR DESIGN ENGR. — DATE
APPROVED AS USE BY UDOT — UDOT BRIDGE ENGR. — DATE

US-191; OVER COLORADO RIVER BRIDGE
SOIL DATA SHEET
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
R-545 DRG. NO.
SHT. 2 OF 14

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8/5/2008

DRILL HOLE LOG — BORING NO. 07-W-02

SHEET 1 OF 1

PROJECT: US-191: OVER COLORADO RIVER BRIDGE
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: SEE SITE PLAN / STA. 214+46, 33' LT. / N:200,501 E:99,453
DRILLING METHOD: CME-55 NO. 1 / N.W. CASING & N.Q. CORE
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 20.2' AFTER 24 HOURS: ▼ N.M.

PROJECT NUMBER: 200701.200
DATE STARTED: 11/29/07
DATE COMPLETED: 11/30/07
GROUND ELEVATION: 3975.9'
LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Unconfined Strength (psf)
						GM	brown, slightly moist — 2" ASPHALT / 6" ROAD BASE								
3975				6	7,10,11(45)	SM	brown to red-brown, sl. moist, med. dense — SILTY SAND								
					Grab										
				9	9,7,6,(28)	GM (A-1-b(0))	orange-brown, slightly moist, med. dense — SILTY GRAVEL W/SAND		7.6		NP	44	43	13	
	5														
3970				5	19,12,6,(38)	GP-GM (A-1-a(0))	orange-brown, slightly moist, loose — GRAVEL W/SILT & SAND, possible cobbles & boulders		10.5		NP	64	26	10	
				9	6,7,10,(32)	GC (A-2-4(0))	red-brown, slightly moist, loose — CLAYEY GRAVEL W/SAND, possible cobbles & boulders		8.5	22	7	64	20	16	
	10														
3965				9	32,23,8,(50)	GP-GM	red-brown, moist, med. dense — GRAVEL W/SILT & SAND, possible cobbles & boulders (fill?)								
				13	Pushed 0.46	SM (A-2-4(0))	brown, moist	98	11		NP	0	65	35	
				14	4,5,5,(14)	SM	gray-brown, moist, loose — SILTY SAND, few silt layers to 3" thick								
	15														
3960				11	3,3,3,(8)	SM	brown, very moist, loose								
				17	2,2,5,(9)	ML (A-4(0))	brown, wet, loose — SANDY SILT		21.4		NP	7	40	53	
	20		▽												
3955				11	27,42,40,(97)	GP-GM	brown, wet, dense								
							GRAVEL W/SILT & SAND, cobbles & boulders (soft sandstone)								
	25			11	14,20,16,(40)	GP-GM (A-1-a(0))	brown, wet, med. dense		7.4		NP	67	23	10	
3950															
	30			12	28,22,16,(40)	GM	brown, wet, med. dense — SILTY GRAVEL W/SAND, cobbles & boulders								
3945															
							MUDSTONE, very highly weathered								
	35			10	39,56/5"	-	red-brown, hard								
3940				22	Core 86,62	GC (A-4(0))	red-brown, very soft rock to soft rock — CLAYEY MUDSTONE (CLAYEY GRAVEL W/SAND), very highly weathered	138.3	7.8	20	7	33	31	36	110
	40			18	Core 30,20	-	red-brown, very soft rock	137.9	7.9						40
3935							MUDSTONE, highly fractured (horizontal & vertical), broken & brecciated, rubble zones, green staining on fractures								
	45			18	Core 30,0	-	red-brown, very soft rock								
3930															

DRILL HOLE LOG — BORING NO. 07-W-03

SHEET 1 OF 1

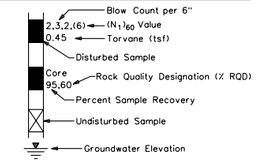
PROJECT: US-191: OVER COLORADO RIVER BRIDGE
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: SEE SITE PLAN / STA. 226+95, 42' LT. / N:201,476 E:98,672
DRILLING METHOD: CME-55 NO. 1 / N.W. CASING & N.Q. CORE
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 17.0' AFTER 24 HOURS: ▼ N.M.

PROJECT NUMBER: 200701.200
DATE STARTED: 12/4/07
DATE COMPLETED: 12/4/07
GROUND ELEVATION: 3973.5'
LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Unconfined Strength (psf)
				15	5,15,18,(70)	GM	red-brown, slightly moist, med. dense								
3970				15	10,12,24,(77)	GM (A-1-b(0))	red-brown, slightly moist, med. dense — SILTY GRAVEL W/SAND (fill?)		7.1		NP	39	37	24	
	5			3	56/4"	GM	red-brown, slightly moist, very dense								
				12	7,9,15,(45)	SP (A-3(0))	red-brown, moist, med. dense — SAND W/GRAVEL		16.9		NP	38	30	2	
3965	10														
				12	3,3,3,(10)	ML	red-brown to lt. brown, wet, loose — SANDY SILT								
3960				8	3,2,2,(6)	ML (A-4(0))	brown, wet, very loose		25		NP	0	37	63	
	15														
			▽	12	Pushed	SM (A-2-4(0))	lt. brown, wet — SILTY SAND	102.3	15.6		NP	2	81	17	
3955				12	11,12,10,(29)	GP-GM	lt. brown, wet, loose — GRAVEL W/SILT & SAND								
	20			12	36,12,11,(29)	GP-GM	brown, wet, loose								
							MUDSTONE, very highly weathered								
3950				1	47/1"	-	red-brown, very soft rock								
	25			56	Core 95,67	CL-ML (A-4(0))	red-brown, soft rock — SANDY SILTSTONE (SANDY SILTY CLAY)		153.2	3.3	22	4	0	35	65	2050
						-	red-brown, soft rock — SILTY MUDSTONE								
				56	Core 95,67	-	red-brown, soft rock								
3945	30						CLAYSTONE (SANDY LEAN CLAY), silty mudstone layers, some near vertical (80°/64) fractures								
				58	Core 96,62	CL (A-6(5))	red-brown, soft rock		148.7	5.4	27	11	0	30	70	450
3940															

KEY TO BORING LOG

SYMBOLS



RELATIVE DENSITY (NON-PLASTIC - SAND & SILT)

VERY LOOSE N<4
LOOSE N 4-10
MED DENSE N 10-30
DENSE N 30-50
VERY DENSE N>50

CONSISTENCY (PLASTIC - SILT & CLAY)

VERY SOFT N<2
SOFT N 2-4
MEDIUM STIFF N 4-8
STIFF N 8-15
VERY STIFF N 15-30
HARD N>30

GENERAL NOTES

1. THE SUBSURFACE EXPLORATIONS SHOWN WERE CONDUCTED BETWEEN 11-29-07 AND 12-04-07 BY RB&G ENGINEERING, INC..
2. THESE BORING LOGS REPRESENT A SYNOPSIS OF THE SOIL DEPOSITS ENCOUNTERED WITHIN EACH BORING AND ARE BASED ON SOUND GEOLOGICAL AND ENGINEERING JUDGMENT. BECAUSE SOIL IS A COMPLEX MEDIUM, THESE BORING LOGS MAY OR MAY NOT REPRESENT THE SOIL CONDITIONS AT THIS SITE. THIS SUBSURFACE INTERPRETATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION AND JUDGEMENT OF THE CONTRACTOR.
3. THE WATER LEVELS AND CONDITIONS INDICATED ON THE BORING LOGS REPRESENT HOLE CONDITIONS ON THE DATE SHOWN, HOWEVER, IT SHOULD BE NOTED, THAT AT LOCATIONS AWAY FROM THE BORINGS OR AT ANOTHER TIME THE WATER LEVELS AND CONDITIONS MAY VARY SIGNIFICANTLY.
4. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.
5. COBBLE - A ROCK WITH AN AVERAGE DIMENSION BETWEEN 3 INCHES AND 12 INCHES
6. BOULDER - A ROCK WITH AN AVERAGE DIMENSION OF 12 INCHES OR GREATER

NOTE: DRILL RIG USED - CME-55 NO. 1
HAMMER E=0.75

GEOTECHNICAL ENGINEER

NO.	DATE	BY	REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN MNH 12/07 — CHECK SRJ 1/08
DRAWN JPN 2/08 — CHECK SRJ 2/08
QUANT. - - — CHECK - -

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE
SOIL DATA SHEET
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
R-545 DRG. NO.
SHT. 3 OF 14

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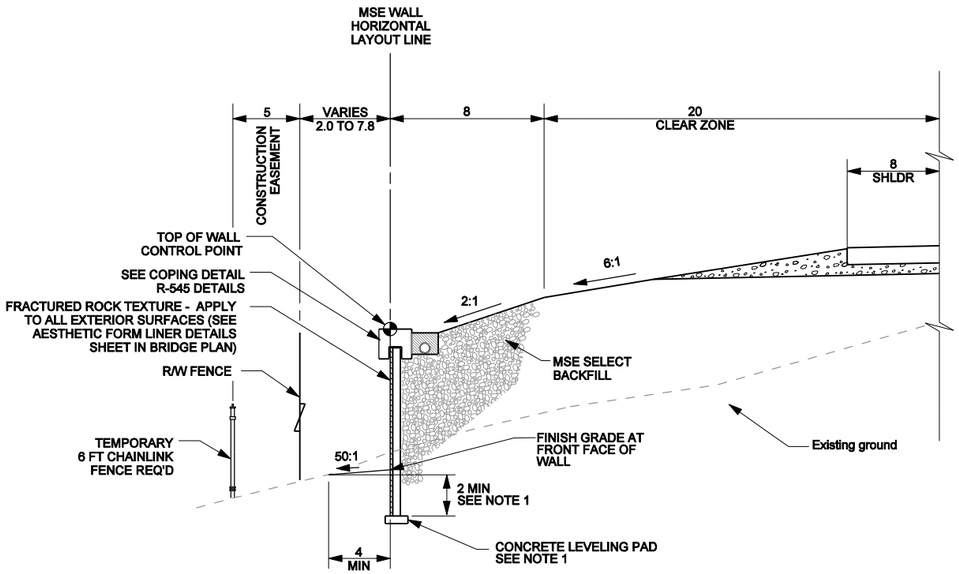
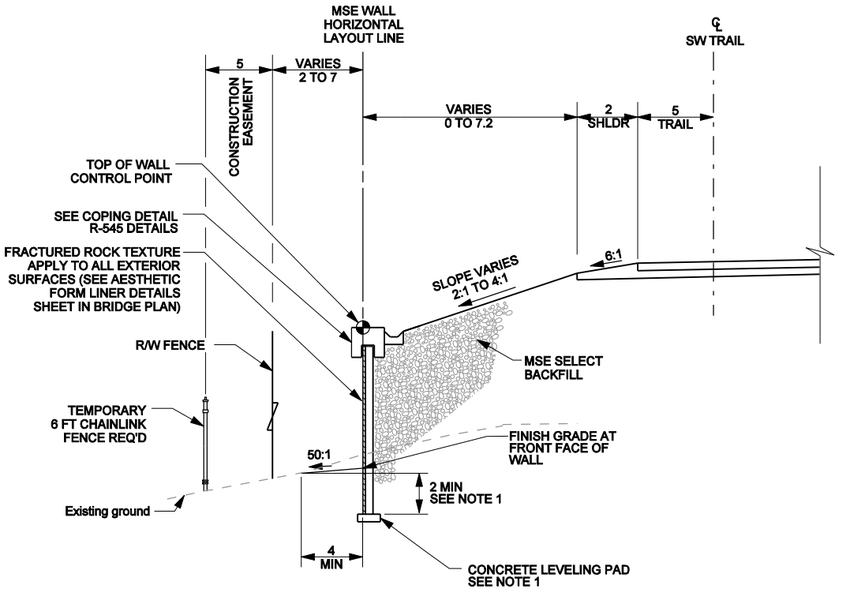
8/5/2008



TYPICAL SECTION R-545.1

NTS

MSE WALL R-545A STA 10+98.50 TO STA 12+49.38

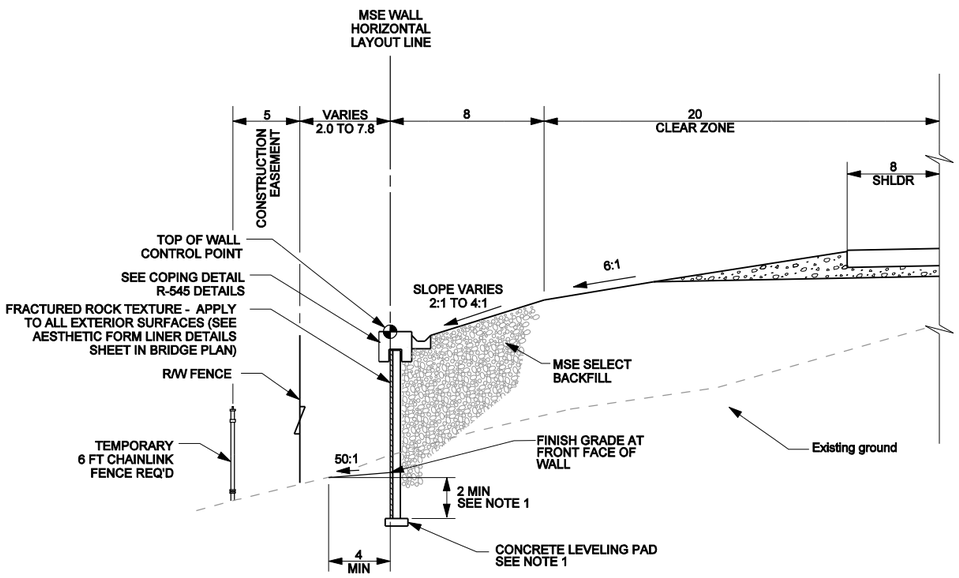


TYPICAL SECTION R-545.2

NTS

MSE WALL R-545B STA 18+30.95 TO STA 18+75.78

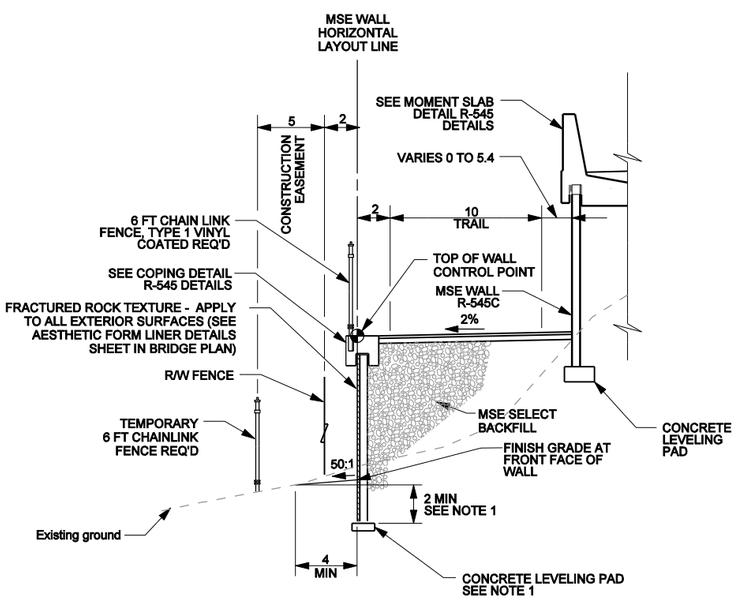
MSE WALL R-545B STA 23+08.39 TO STA 23+25.69



TYPICAL SECTION R-545.1A

NTS

MSE WALL R-545B STA 14+99.64 TO STA 18+30.59



TYPICAL SECTION R-545.3

NTS

MSE WALL R-545B STA 18+75.78 TO STA 23+08.39

1. PROVIDE 2'-0 MIN. TOP OF LEVELING PAD EMBEDMENT DEPTH. LEVELING PAD EMBEDMENT DEPTH MAY INCREASE PER MANUFACTURES FABRICATION PLANS AND SPECIFICATIONS.
2. WALL HEIGHT MEASURED FROM WALL LAYOUT CONTROL POINT TO FINISHED GRADE AT FRONT FACE OF WALL.
3. FENCE POLE SLEEVE DIAMETER VARIES 3 1/2" TO 4". 3 1/2" SLEEVE EVERY 10-FEET. 4" SLEEVE EVERY 500-FEET OR ON FENCE CORNERS. SEE UDOT STD DWG FG 6.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN — CHECK
DRAWN — CHECK
QUANT. — CHECK

APPROVAL RECOMM. — DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

MSE WALL R-545 TYPICAL SECTIONS

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

R-545
DRG. NO.

SHT. 4 OF 14

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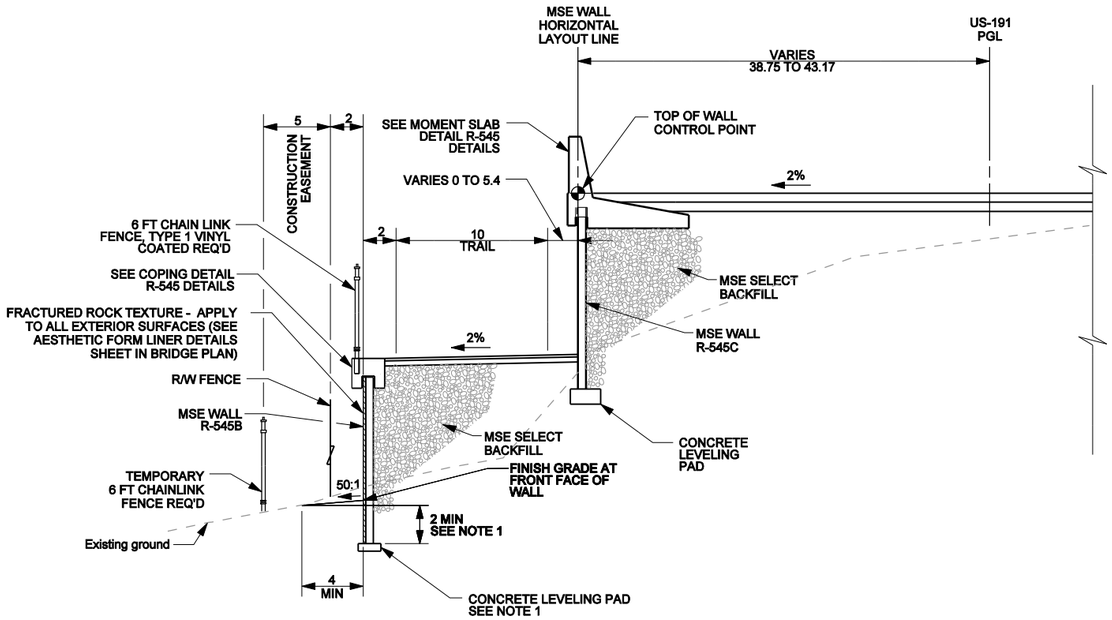
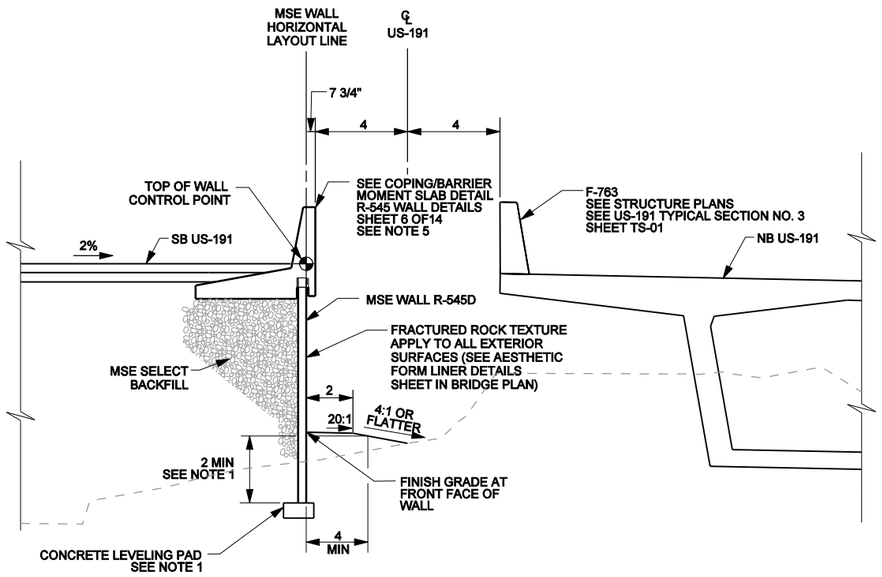
8/6/2008



TYPICAL SECTION R-545.4

NTS

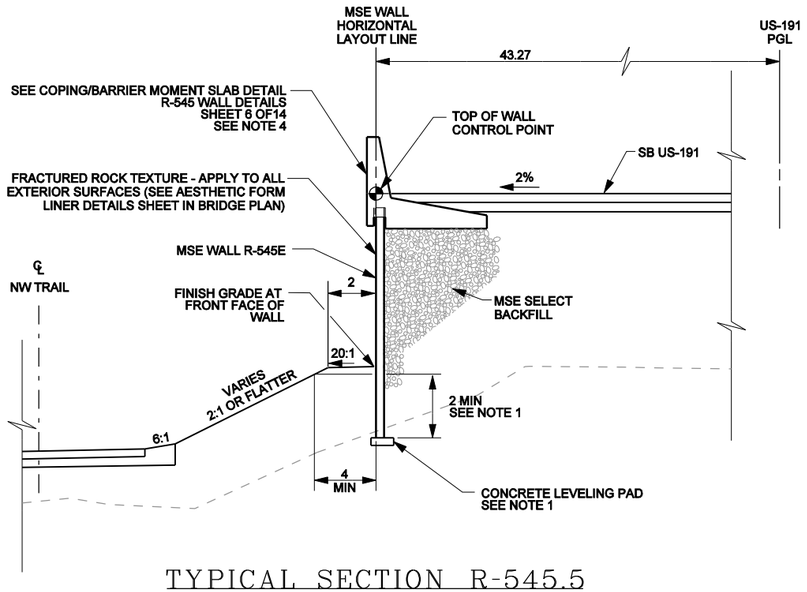
MSE WALL R-545C STA 0+00.00 TO STA 4+24.93



TYPICAL SECTION R-545.6

NTS

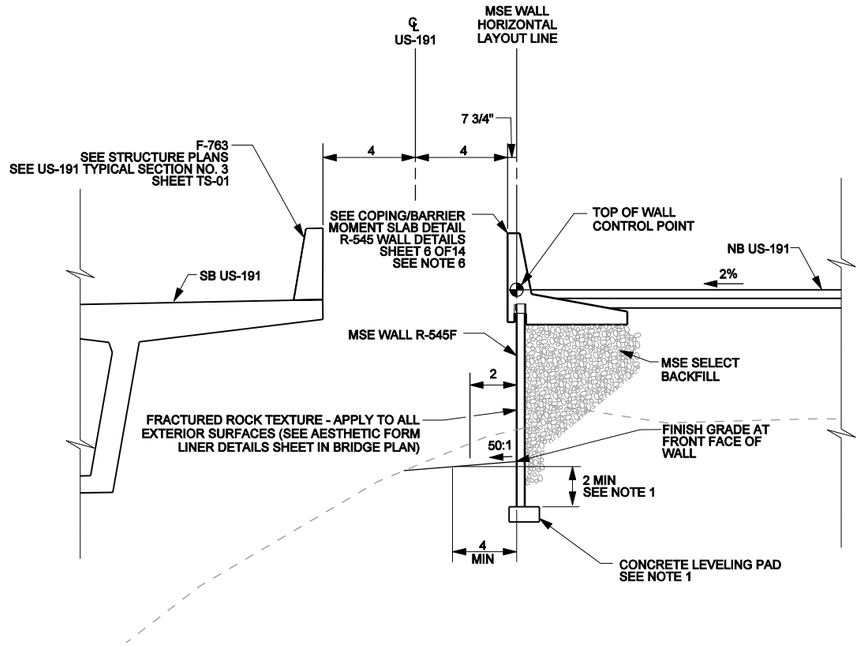
MSE WALL R-545D STA 0+00.00 TO STA 0+35.00



TYPICAL SECTION R-545.5

NTS

MSE WALL R-545E STA 0+00.00 TO STA 0+35.30



TYPICAL SECTION R-545.7

NTS

MSE WALL R-545F STA 0+00.00 TO STA 0+35.00

1. PROVIDE 2'-0 MIN. TOP OF LEVELING PAD EMBEDMENT DEPTH. LEVELING PAD EMBEDMENT DEPTH MAY INCREASE PER MANUFACTURES FABRICATION PLANS AND SPECIFICATIONS.
2. WALL HEIGHT MEASURED FROM WALL LAYOUT CONTROL POINT TO FINISHED GRADE AT FRONT FACE OF WALL.
3. FENCE POLE SLEEVE DIAMETER VARIES 3 1/2" TO 4". 3 1/2" SLEEVE EVERY 10-FEET. 4" SLEEVE EVERY 500-FEET OR ON FENCE CORNERS. SEE UDOT STD DWG FG 6.
4. FROM STA 225+52.24 TO STA 225+72.74 CONSTRUCT APPROACH SLAB PER BRIDGE DRAWINGS.
5. FROM STA 215+06.77 TO STA 215+36.77 CONSTRUCT APPROACH SLAB PER BRIDGE DRAWINGS.
6. FROM STA 225+14.24 TO STA 225+34.74 CONSTRUCT APPROACH SLAB PER BRIDGE DRAWINGS.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN CHECK
DRAWN CHECK
QUANT. CHECK

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

MSE WALL R-545 TYPICAL SECTIONS

PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

R-545 DRG. NO.

SHT. 5 OF 14

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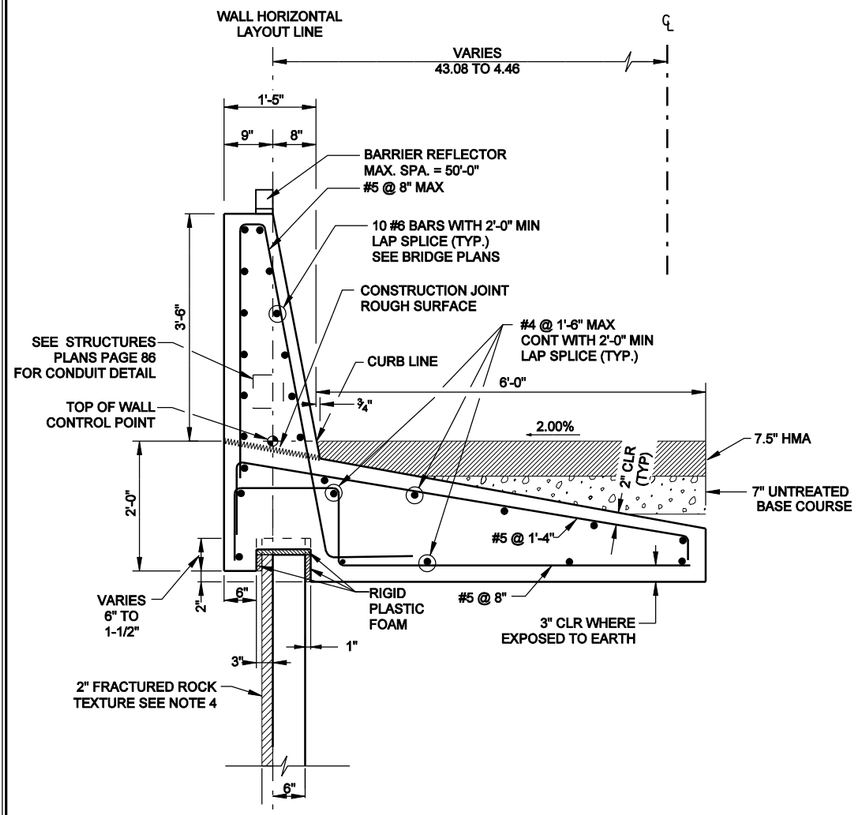
8/6/2008



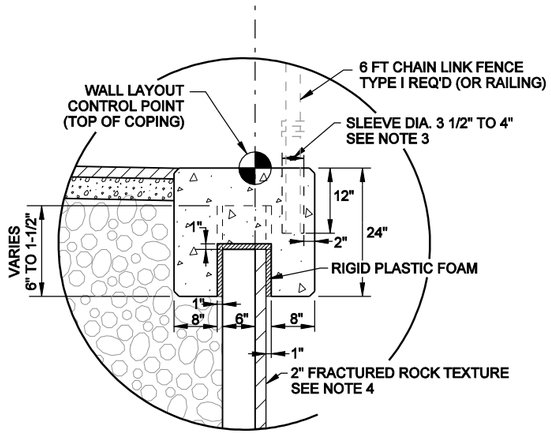
COPING/BARRIER MOMENT SLAB DETAIL

NTS

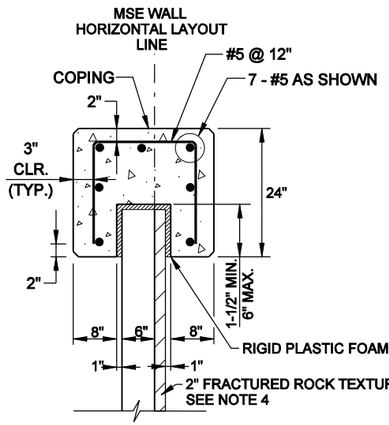
US-191 STA 211+00.47 38.67 LT TO STA 215+01.27 43.08 LT
US-191 STA 214+90.35 4.46 LT TO STA 215.01.27 4.75 LT
US-191 STA 225+78.27 43.08 LT TO STA 225+89.49 43.00 LT
US-191 STA 225+40.27 4.75 RT TO STA 225+51.19 4.75 RT

1. PROVIDE 2'-0 MIN. TOP OF LEVELING PAD EMBEDMENT DEPTH. LEVELING PAD EMBEDMENT DEPTH MAY INCREASE PER MANUFACTURES FABRICATION PLANS AND SPECIFICATIONS.
2. WALL HEIGHT MEASURED FROM WALL LAYOUT CONTROL POINT TO FINISHED GRADE AT FRONT FACE OF WALL.
3. FENCE POLE SLEEVE DIAMETER VARIES 3 1/2" TO 4". 3 1/2" SLEEVE EVERY 10-FEET. 4" SLEEVE EVERY 500-FEET OR ON FENCE CORNERS. SEE UDOT STD DWG FG 6.
4. 2" FRACTURED ROCK TEXTURE - APPLY TO ALL EXTERIOR SURFACES (SEE AESTHETIC FORM LINER DETAILS SHEET IN BRIDGE PLAN)

PRELIMINARY
NOT FOR CONSTRUCTION



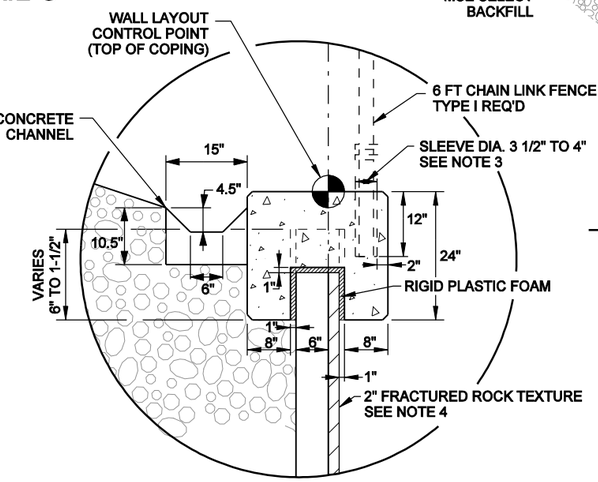
DETAIL A



DETAIL C

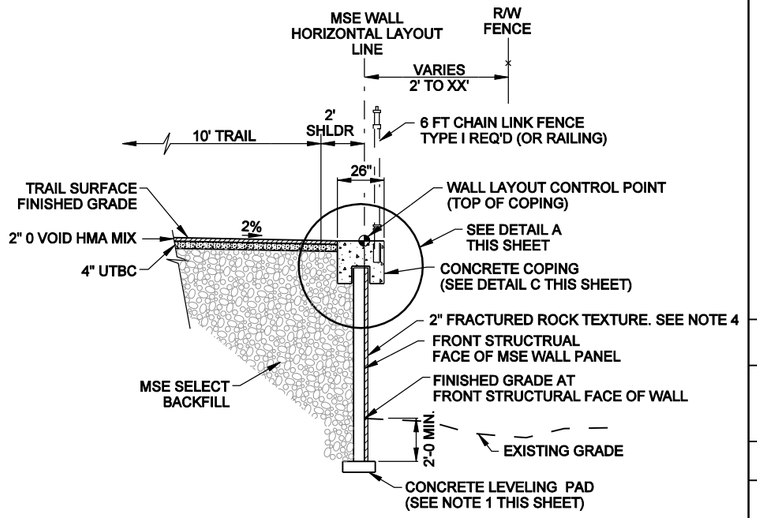
DETAIL B

US-191 STA 205+10.00 TO US 191 STA 206+57.13



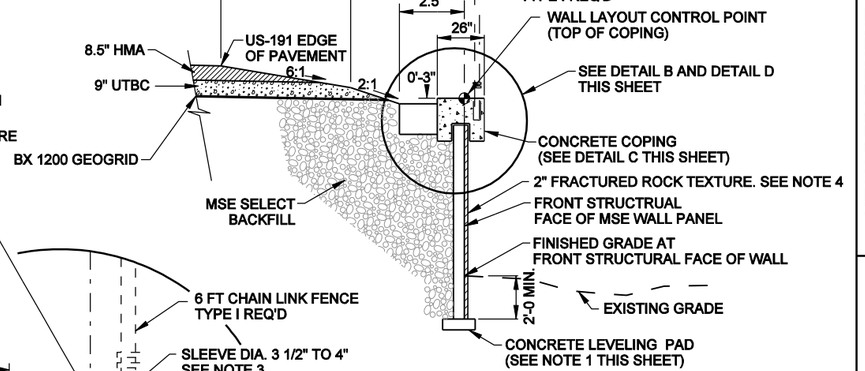
DETAIL D

US-191 STA 207+24.64 TO US 191 STA 211+00.75
US-191 STA 215+32.48 TO US 191 STA 215+49.51



MSE WALL COPING DETAIL

US-191 STA 211+00.75 TO US 191 STA 215+32.48



MSE WALL COPING DETAIL

US-191 STA 205+10.00 TO US 191 STA 206+57.13
US-191 STA 207+24.64 TO US 191 STA 211+00.75
US-191 STA 215+32.48 TO US 191 STA 215+49.51

NO.	DATE	BY	REVISIONS REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN — CHECK XXX
DRAWN — CHECK
QUANT. — CHECK XXX

APPROVAL RECOMM. — SENIOR DESIGN ENGR. — DATE
APPROVED FOR USE BY UDOT — UDOT BRIDGE ENGR. — DATE

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
R-545 WALL DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
R-545 DRG. NO.
SHT. 6 OF 14

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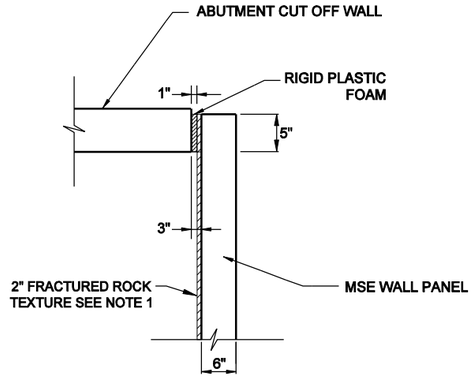
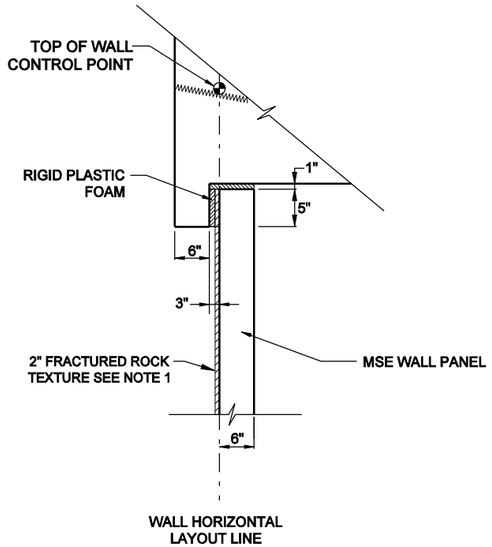
8/6/2008



ABUTMENT CUT OFF WALL TIE-IN DETAIL

NTS



BRIDGE ABUTMENT TIE-IN DETAIL

NTS

NOTE

1. 2" FRACTURED ROCK TEXTURE - APPLY TO ALL EXTERIOR SURFACES (SEE AESTHETIC FORM LINER DETAILS SHEET IN BRIDGE PLAN)

PRELIMINARY
NOT FOR CONSTRUCTION

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8/6/2008

REVISIONS

NO.	DATE	BY	REMARKS

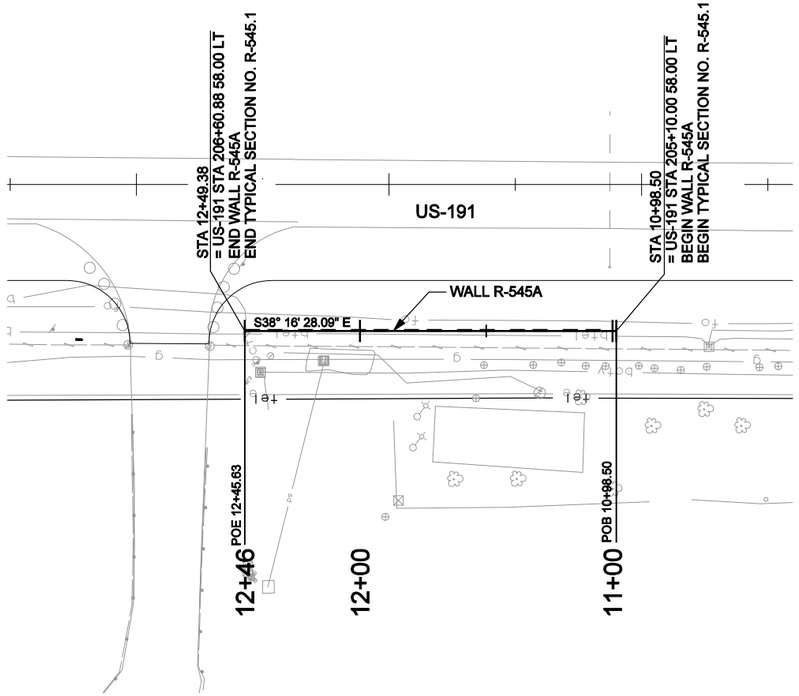
UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN ____ CHECK XXX
DRAWN ____ CHECK ____
QUANT. ____ CHECK XXX

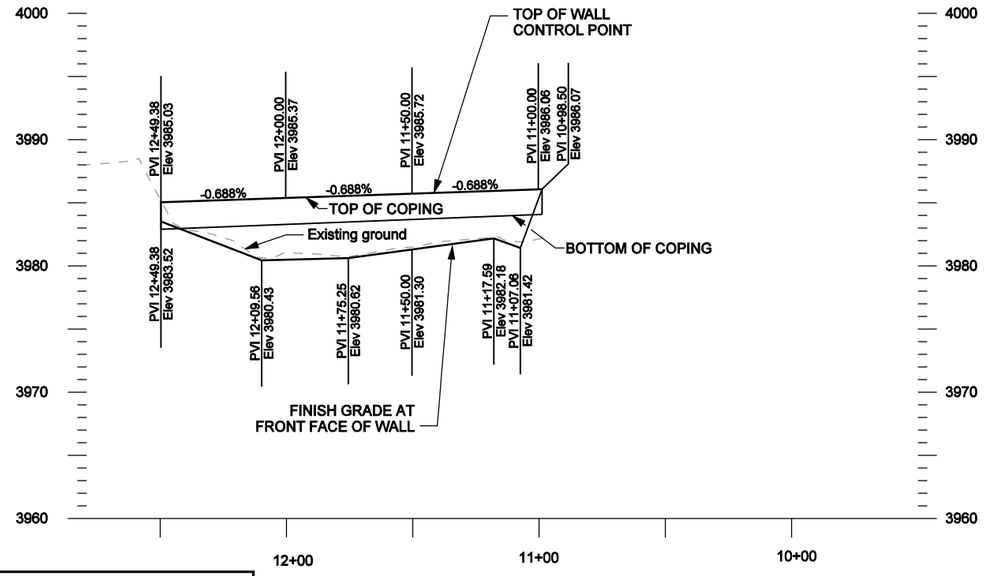
APPROVAL RECOMM. ____ DATE ____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT ____ DATE ____ UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH
R-545 WALL DETAILS
PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY
R-545 DRG. NO.
SHT. 7 OF 14

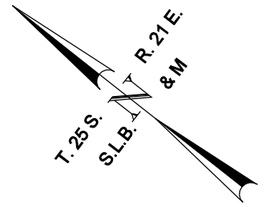


R-545A PLAN



R-545A PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION



QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL (R-545A) (EST. QTY. 581 SQ. FT.)	1	LUMP

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN ____ CHECK ____
DRAWN ____ CHECK ____
QUANT. ____ CHECK ____

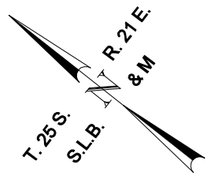
APPROVAL RECOMM. ____ DATE ____ SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT ____ DATE ____ UDOT BRIDGE ENGR.

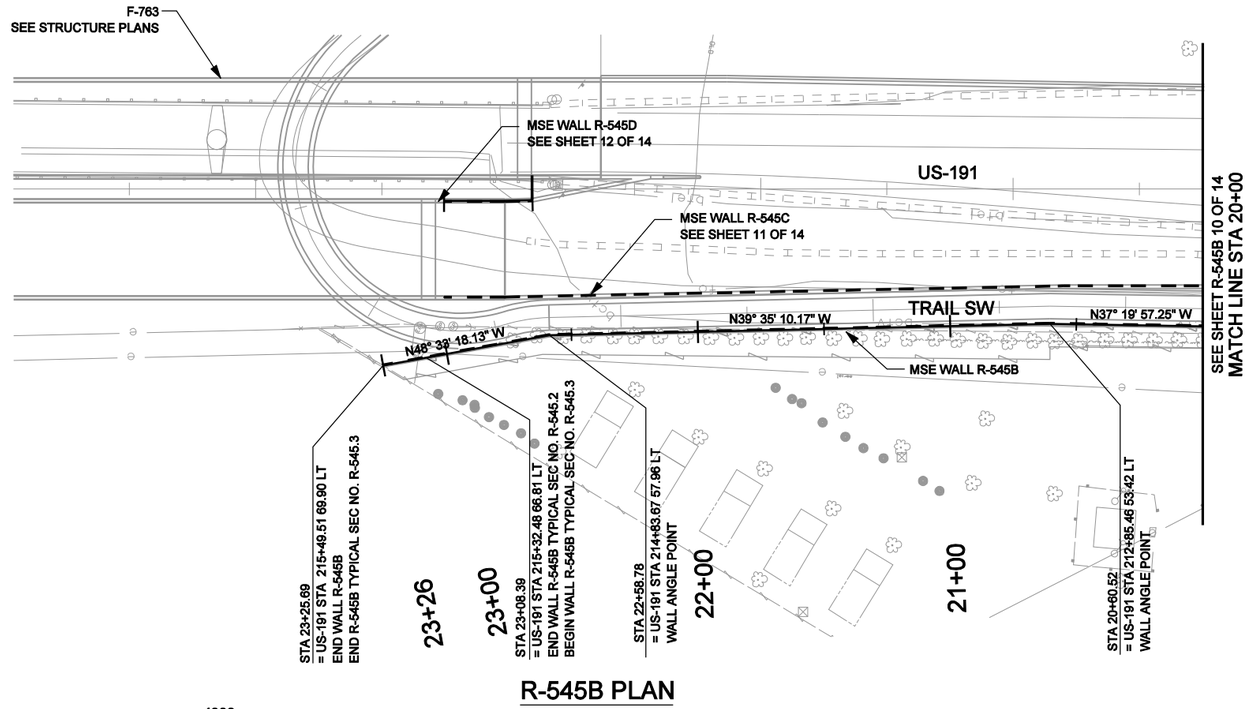
US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
WALL R-545A SITUATION & LAYOUT
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

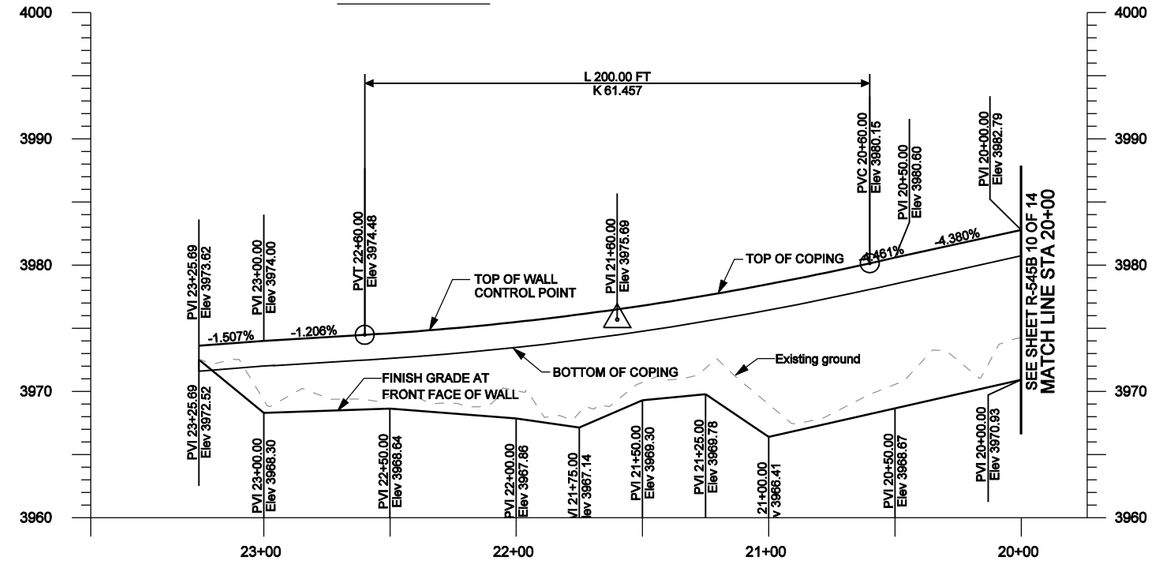
R-545
DRG. NO.

SHT. 8 OF 14





R-545B PLAN



R-545B PROFILE

QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL (R-545B) (EST. QTY. 6131 SQ. FT.)	1	LUMP

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	BY	REMARKS

REVISIONS

DESIGN XXX MM/YY CHECK XXX MM/YY
DRAWN XXX MM/YY CHECK XXX MM/YY
QUANT. XXX MM/YY CHECK XXX MM/YY

APPROVAL RECOMM. _____ DATE _____ SENIOR DESIGN ENGR.

APPROVED FOR USE BY UDOT _____ DATE _____ UDOT BRIDGE ENGR.

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
WALL R-545B SITUATION & LAYOUT

PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

R-545
DRG. NO.

SHT. 9 OF 14

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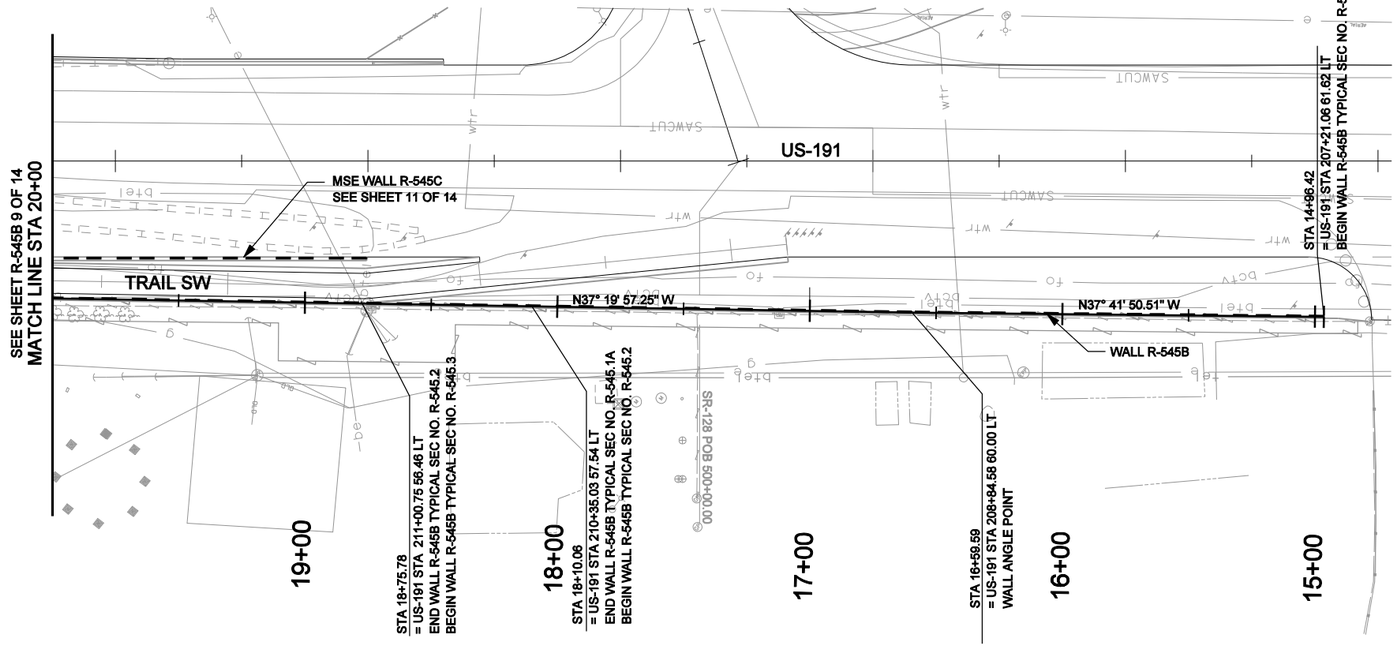
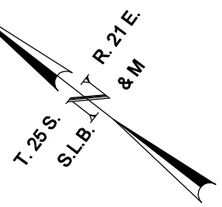
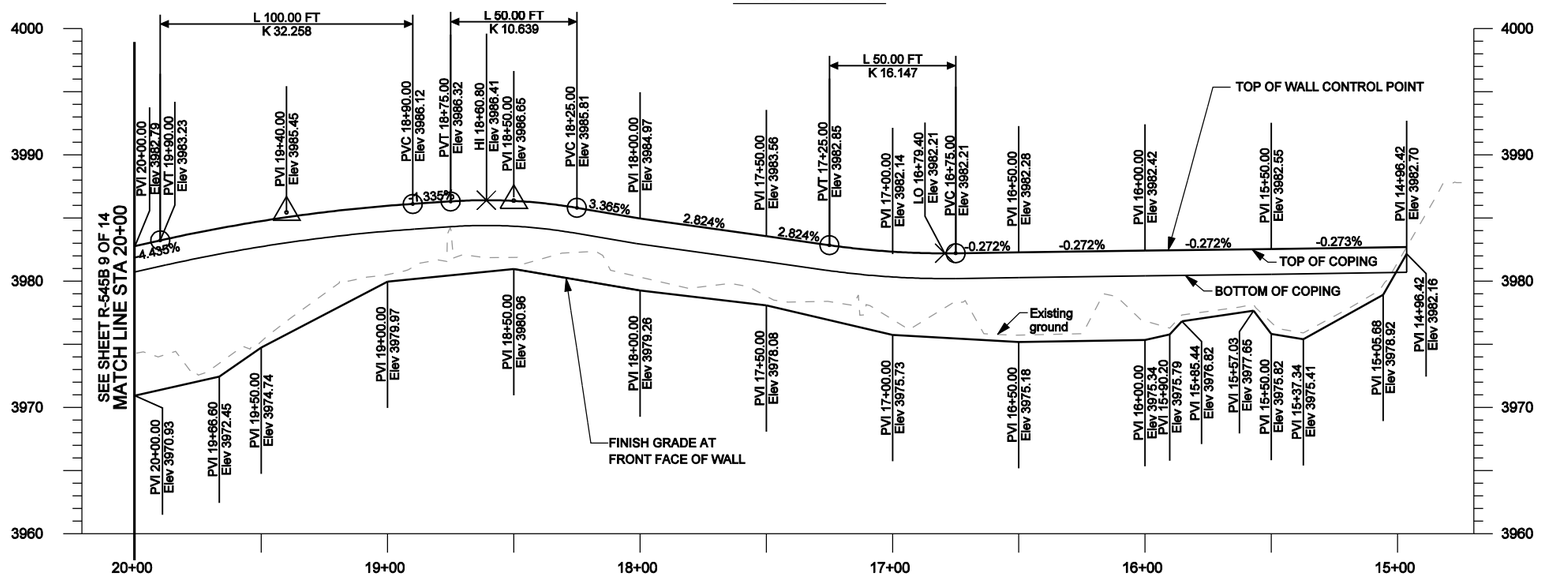


R-545B PLAN





R-545B PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION

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8/6/2008

NO.	DATE	BY	REMARKS
			REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN XXX MM/YY CHECK XXX MM/YY
DRAWN XXX MM/YY CHECK XXX MM/YY
QUANT. XXX MM/YY CHECK XXX MM/YY

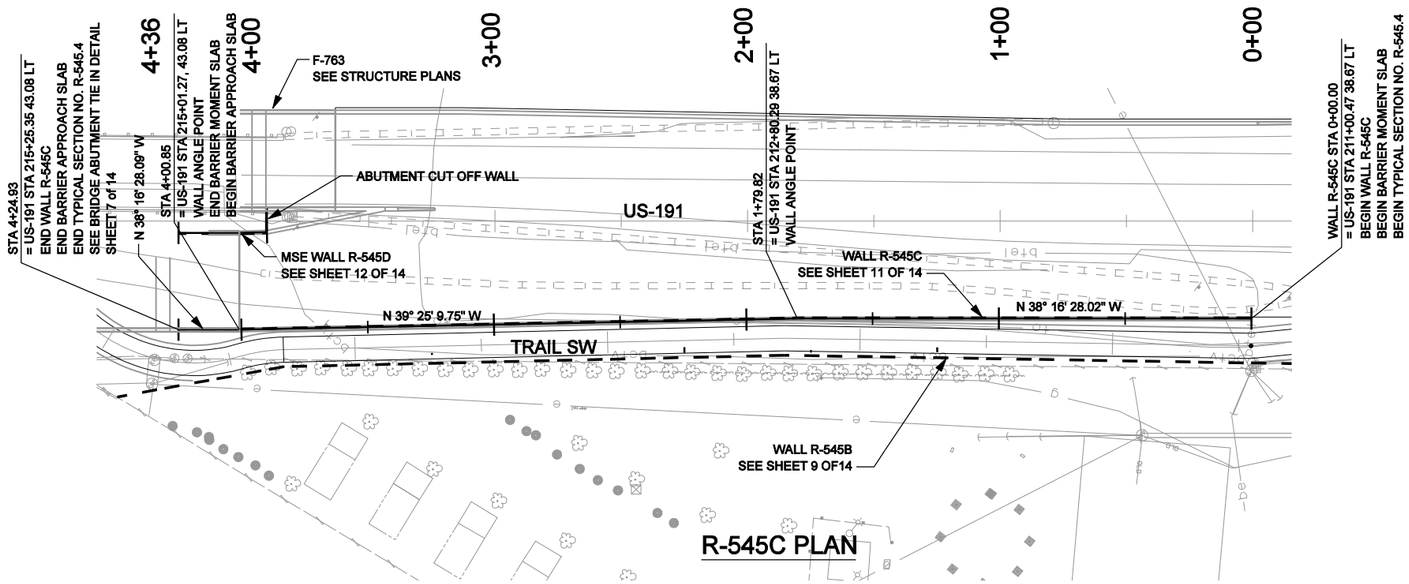
APPROVAL RECOMM. — DATE — BENION DESIGN ENGR.
APPROVED FOR USE BY UDOT — DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
WALL R-545B SITUATION & LAYOUT
PROJECT NUMBER BRF-0191(58)129

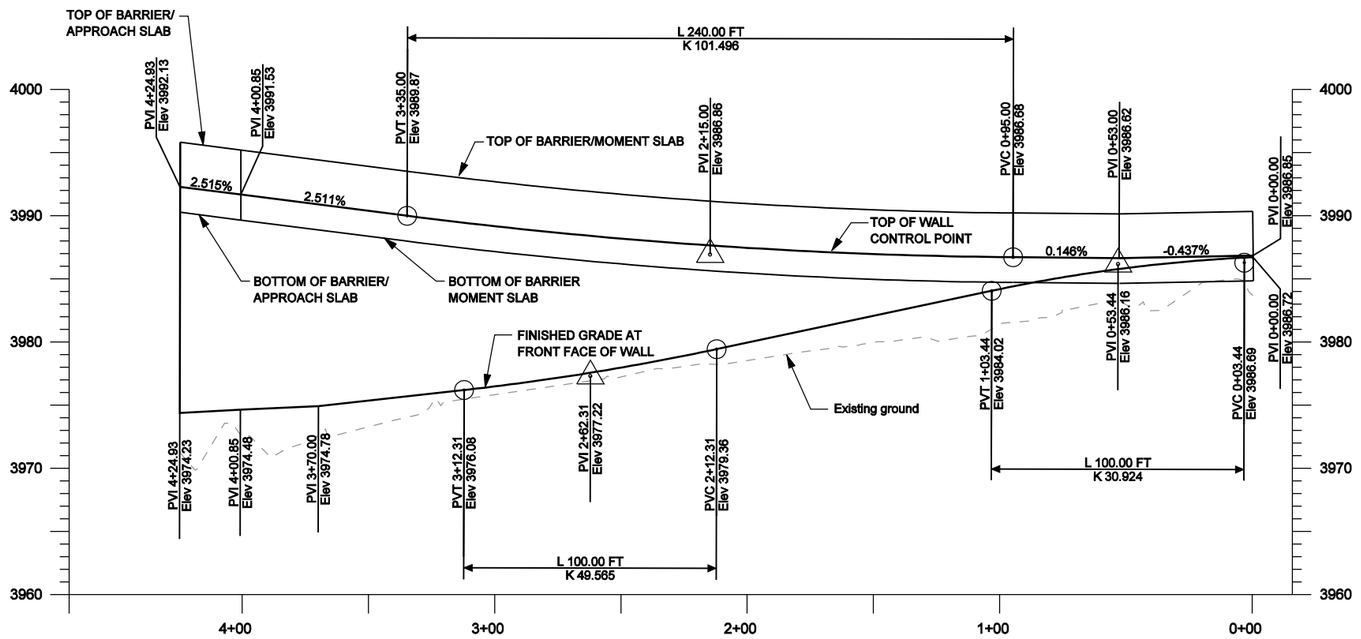
GRAND
COUNTY

R-545
DRG. NO.

SHT. 10 OF 14



R-545C PLAN

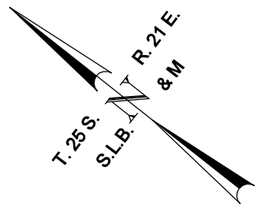


R-545C PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION

QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL REQ'D (R-545C) (EST. QTY. 3541 SQ. FT.)	1	LUMP



NO.	DATE	BY	REVISIONS REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN XXX MM/YY CHECK XXX MM/YY
DRAWN XXX MM/YY CHECK XXX MM/YY
QUANT. XXX MM/YY CHECK XXX MM/YY

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO
RIVER BRIDGE - MOAB UTAH
WALL R-545C SITUATION & LAYOUT
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY
R-545
DRG. NO.
SHT. 11 OF 14

8/6/2008
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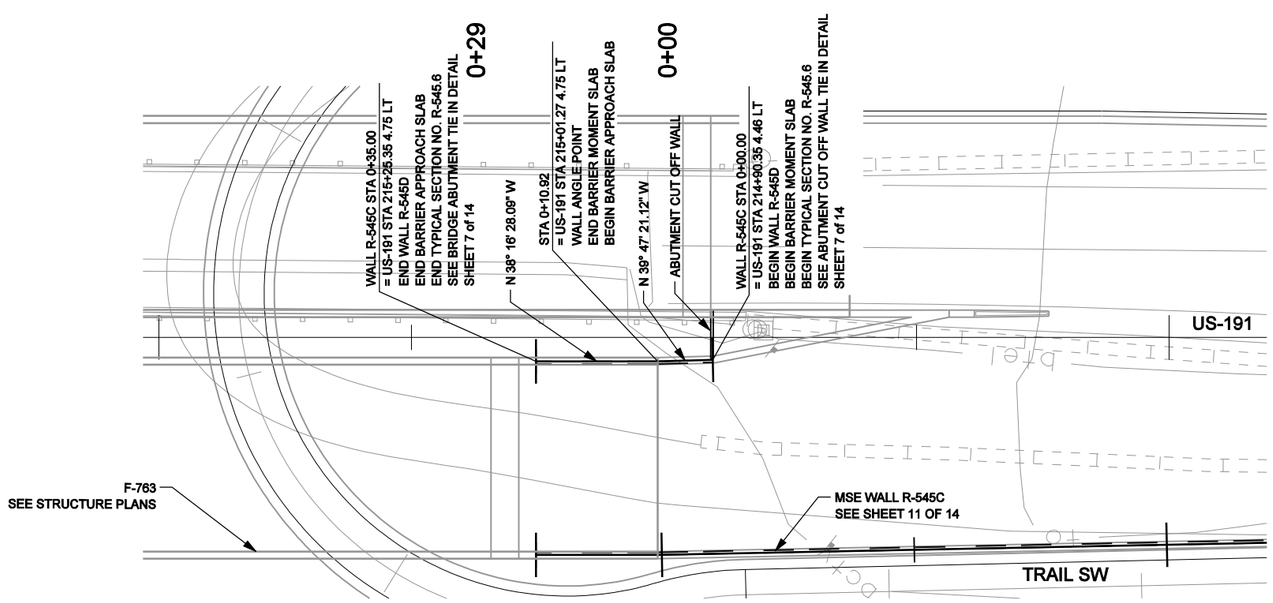
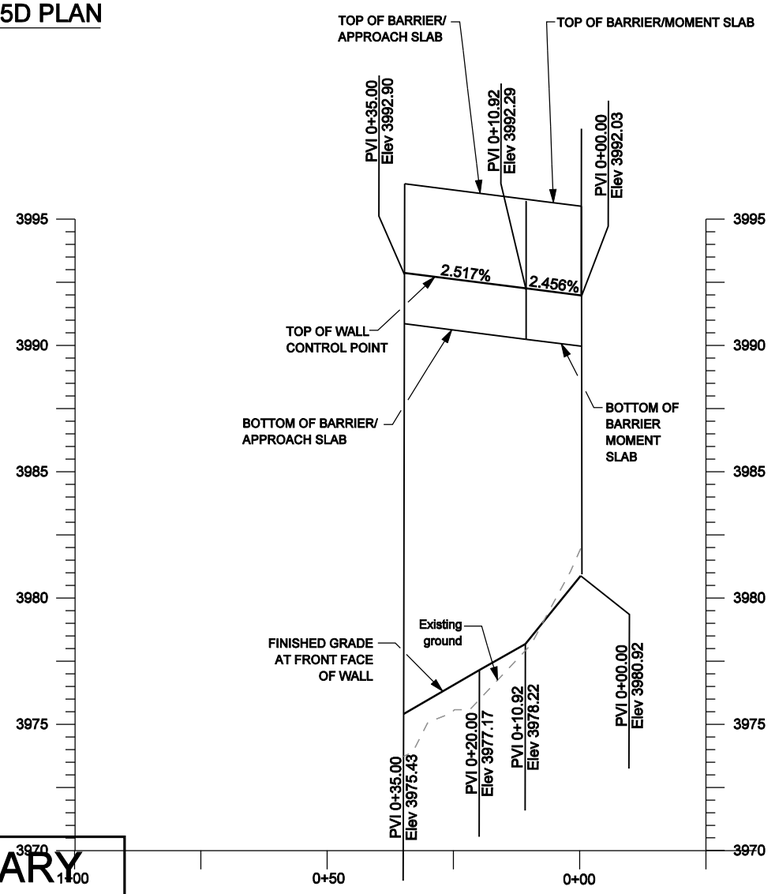
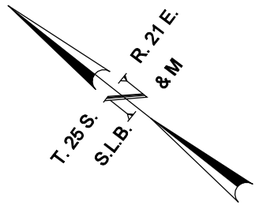


R-545D PLAN



R-545D PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION



QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL REQ'D (R-545D) (EST. QTY. 515 SQ. FT.)	1	LUMP

NO.	DATE	BY	REVISIONS REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN: XXX MM/YY CHECK: XXX MM/YY
DRAWN: XXX MM/YY CHECK: XXX MM/YY
QUANT.: XXX MM/YY CHECK: XXX MM/YY

APPROVAL RECOMM. — SENIOR DESIGN ENGR. — DATE
APPROVED FOR USE BY UDOT — UDOT BRIDGE ENGR. — DATE

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

WALL R-545D SITUATION & LAYOUT

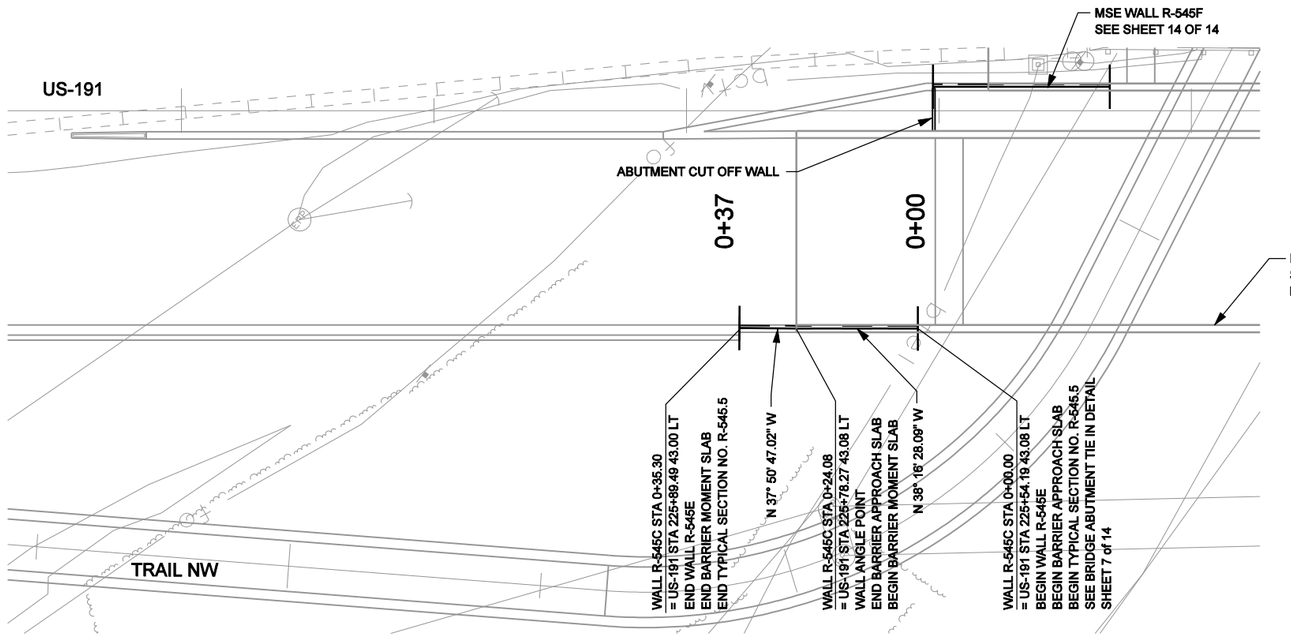
PROJECT NUMBER BRF-0191(58)129

GRAND
COUNTY

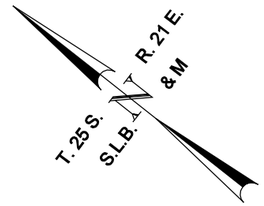
R-545
DRG. NO.

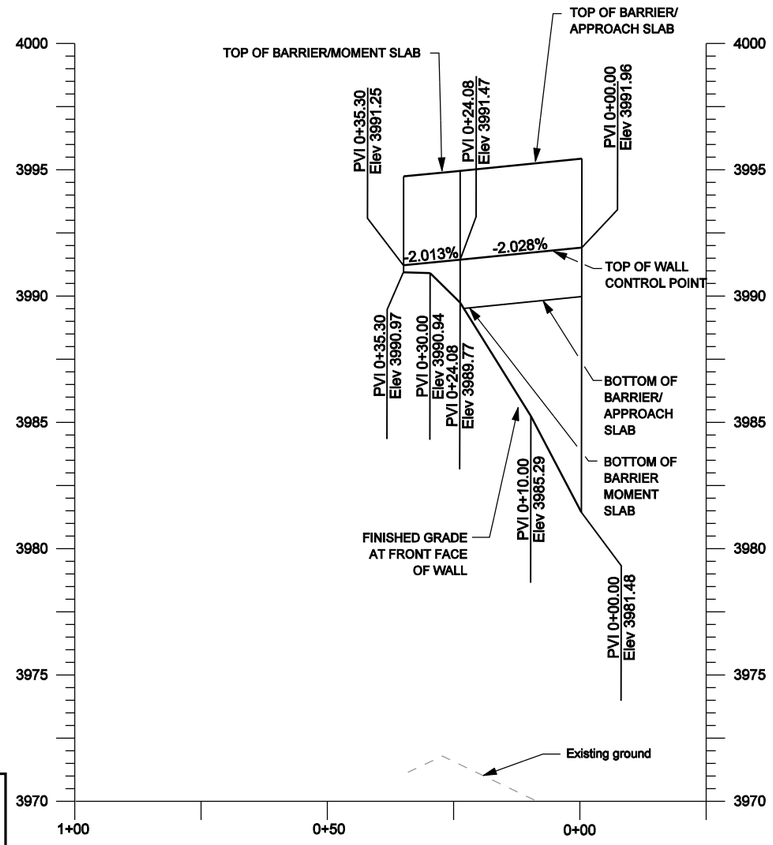
SHT. 12 OF 14

8/6/2008 \\fsslc03\2907-slc-colorado_bridge\5365_07\sheet_files\structures\5365_07_R-545D-01.dgn



R-545E PLAN





R-545E PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION

QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL REQ'D (R-545E) (EST. QTY. 165 SQ. FT.)	1	LUMP

NO.	DATE	BY	REVISIONS
			REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN: XXX MM/YY CHECK: XXX MM/YY
DRAWN: XXX MM/YY CHECK: XXX MM/YY
QUANT.: XXX MM/YY CHECK: XXX MM/YY

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

WALL R-545E SITUATION & LAYOUT

PROJECT NUMBER BRF-0191(58)129

GRAND COUNTY

R-545 DRG. NO.

SHT. 13 OF 14

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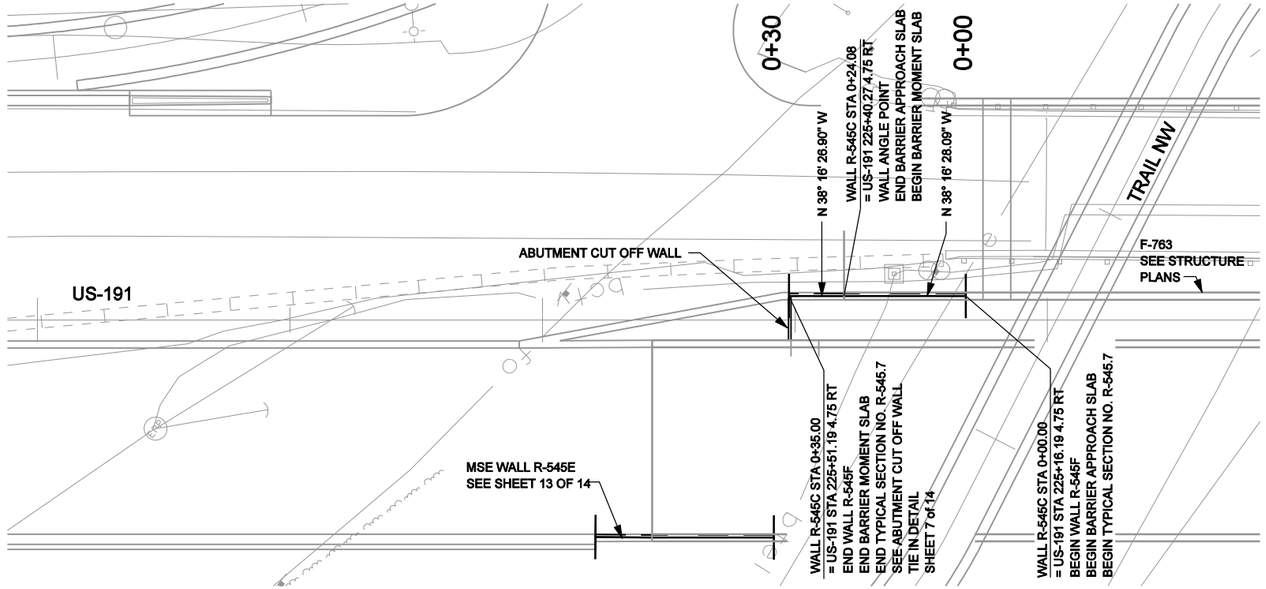
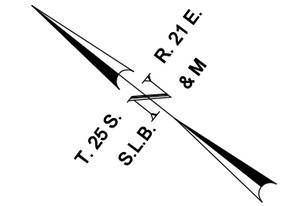
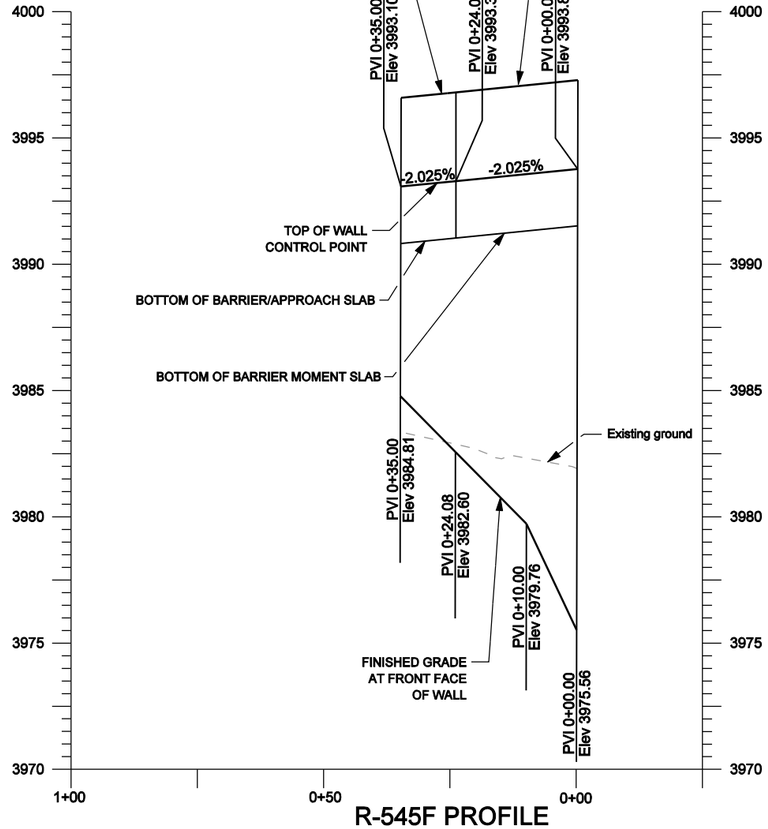
8/6/2008



R-545F PLAN





R-545F PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION

QUANTITIES

ITEM	QTY.	UNIT
RETAINING WALL REQ'D (R-545F) (EST. QTY. 364 SQ. FT.)	1	LUMP

NO.	DATE	BY	REMARKS

REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN XXX MM/YY CHECK XXX MM/YY
DRAWN XXX MM/YY CHECK XXX MM/YY
QUANT. XXX MM/YY CHECK XXX MM/YY

APPROVAL RECOMM. DATE — SENIOR DESIGN ENGR.
APPROVED FOR USE BY UDOT DATE — UDOT BRIDGE ENGR.

US-191; OVER COLORADO RIVER BRIDGE - MOAB UTAH

WALL R-545F SITUATION & LAYOUT

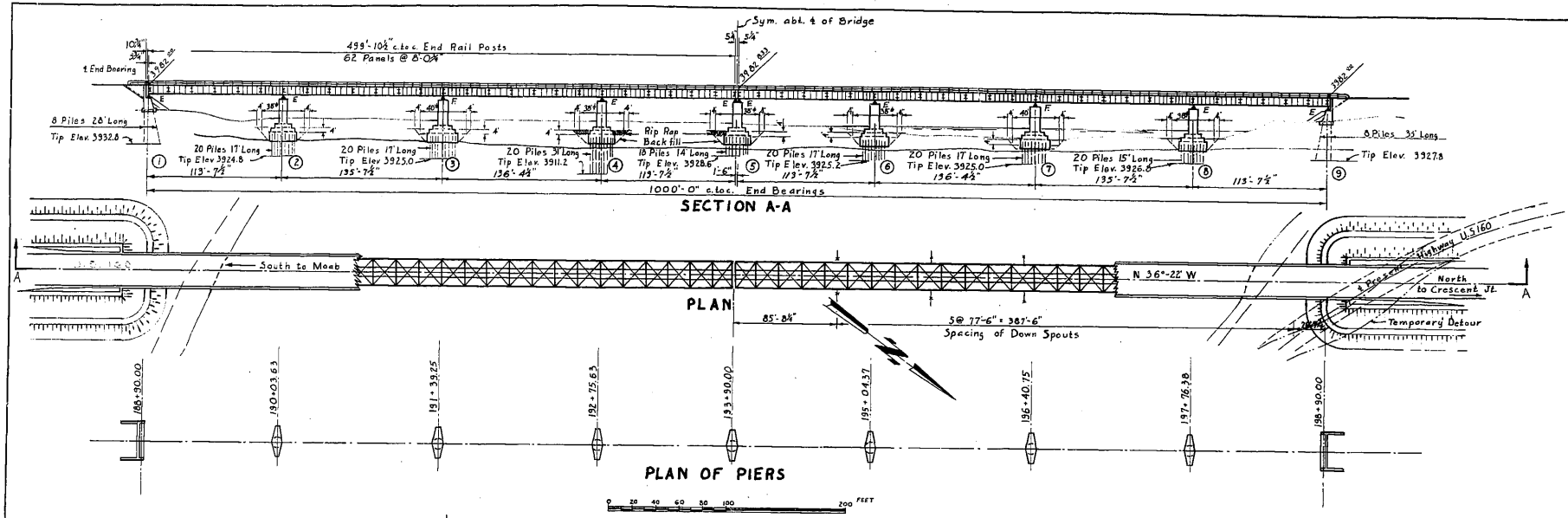
PROJECT NUMBER BRF-0191(58)129

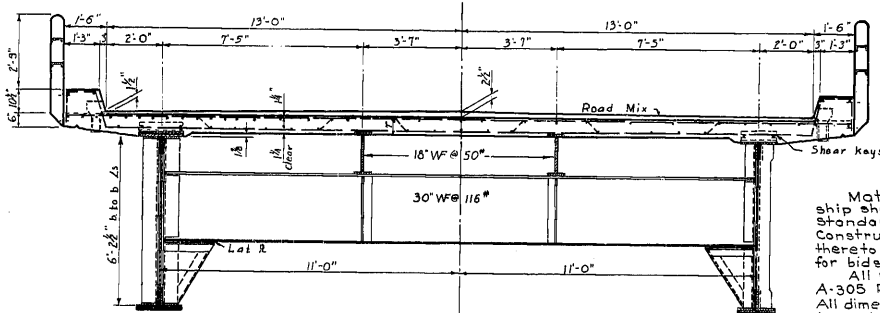
GRAND
COUNTY

R-545
DRG. NO.

SHT. 14 OF 14

\\fsslc03\2507-slc-colorado_bridge\5365_07\sheet_files\structures\5365_07_R-545F_01.dgn
8/6/2008





HALF SECTION AT SUPPORT HALF SECTION AT ℄ OF SPAN

Scale: 0 1 2 FEET

Girder Sections
Web 74"×⅜"
4 Lb 5"×5"×⅜"
At Support
6 Covers 20"×⅝" - 3 Top 3 Bottom 15'-10", 30'-2½", 41'-10"
At ℄ of Span
2 Covers 16"×⅜" - Bottom only End Spans 41'-5" & 58'-7"
1 Cover 18" ⅜" - Bottom only 44'-9½" Int. Spans 43'-4½"

DESIGN DATA

H20-S16-44 Loading in accordance with the A.A.S.H.O. Standard Specifications of 1953 for Highway Bridges.

GENERAL NOTES

Materials, construction and workmanship shall be in accordance with the State Standard Specifications for Road and Bridge Construction, 1952 edition and supplements thereto which are in effect at date of request for bids.

All reinforcing steel shall be Standard A-305 Reinforcing Bars, Intermediate Grade. All dimensions relating to reinforcing steel are to centers of bars.

Type II cement required.

QUANTITIES

	As Const.
Excavation for Structures Unclassified	1,480 ~~16 556~~ Cu. Yds.
Cofferdams	1 Each
Concrete - Class "A"	2,560 Cu. Yds.
Reinforcing Steel	241,000 Lbs.
Structural Steel	1,118,822 ~~1,100,000~~ Lbs.
Painting	1 Each
Steel Handrail	2,074 Lin. Ft.
Piles (other than timber)	3,017 ~~3,020~~ Lin. Ft.
Furnishing Pile Driving Equipment	1 Each
Loose Rip Rap	Piers 1114.1 } Abut. 1131.3 } ~~300~~ Cu. Yds.

REVISIONS

DATE	BY	SCALE	

GENERAL PLAN

SHEET 1 OF 11 SHEETS

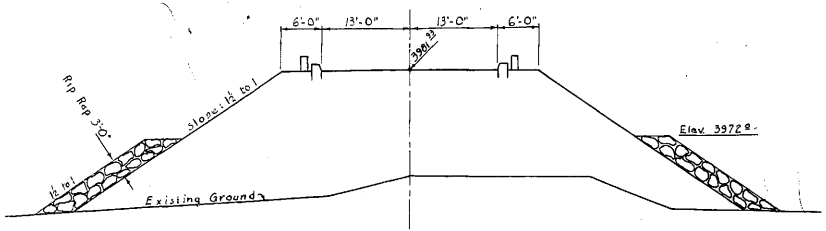
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

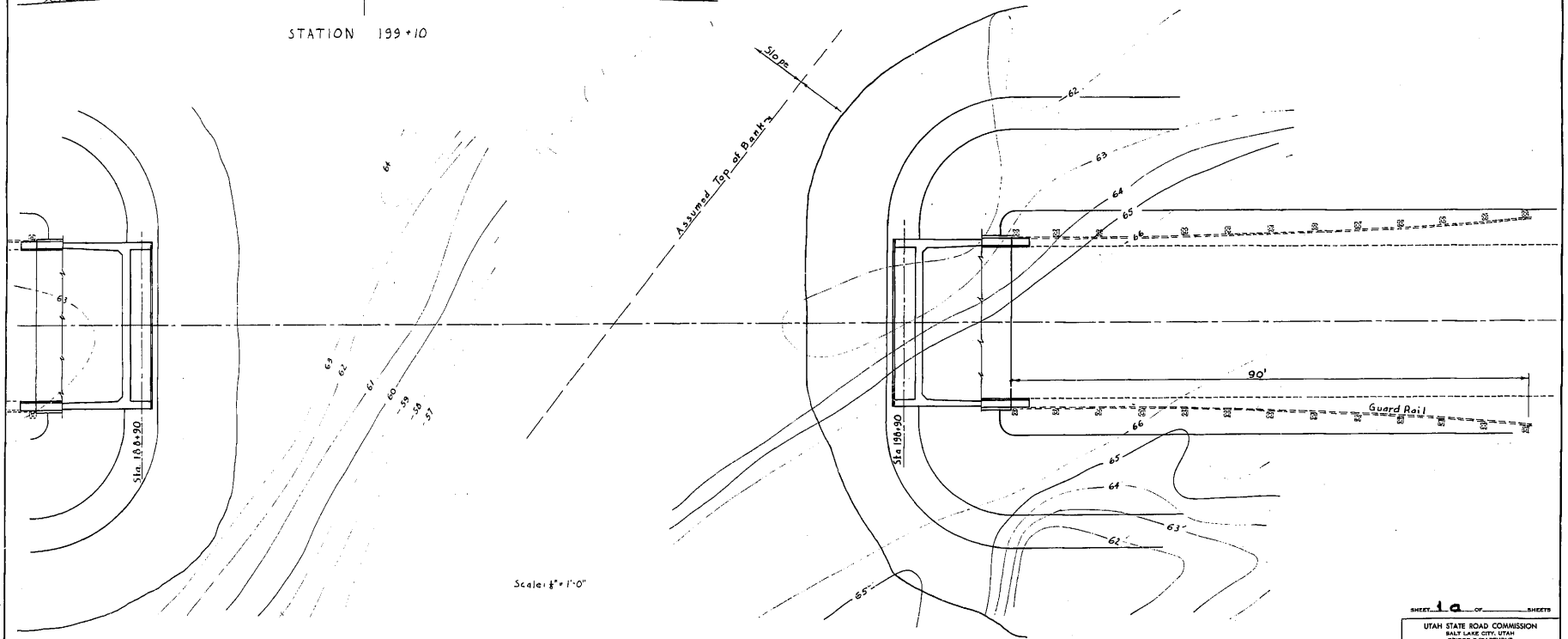
DRAWN BY	R.D.	SCALE	As Shown
CHKD. BY	C.R.D.	DATE	
TRACED BY	V.E.F.	APPROVED	
CHECKED BY	G.B.W.	CHIEF BRIDGE ENGINEER	
DR. NO.	10-77-1-13	DWG. NO.	C-285

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

C-285 SHT. 1 of 11



STATION 199+10



SOUTH BANK

NORTH BANK

REVISIONS

NO.	BY	DATE

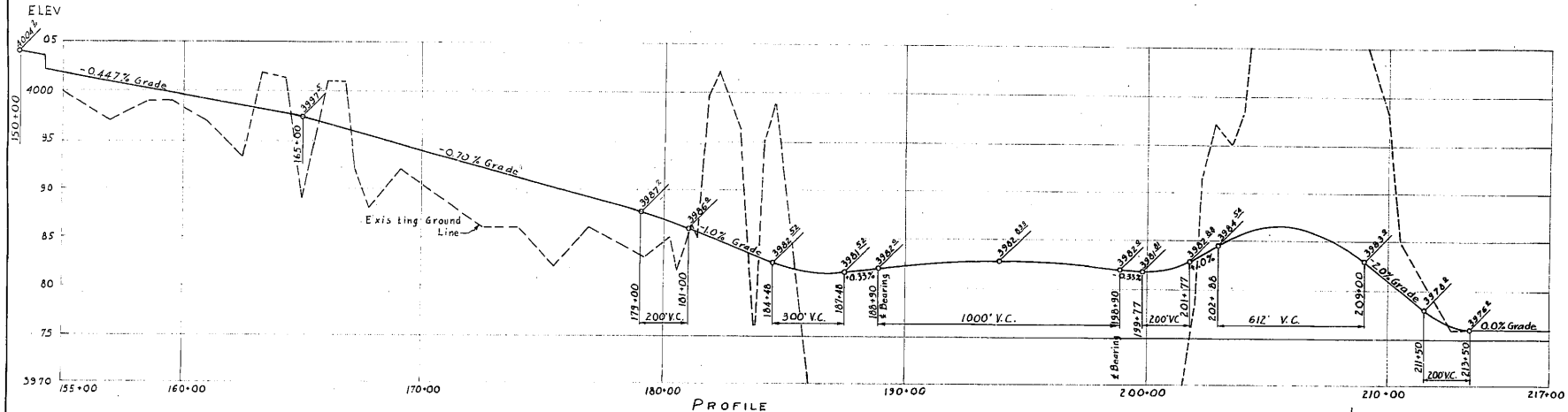
SHEET 1a OF SHEETS

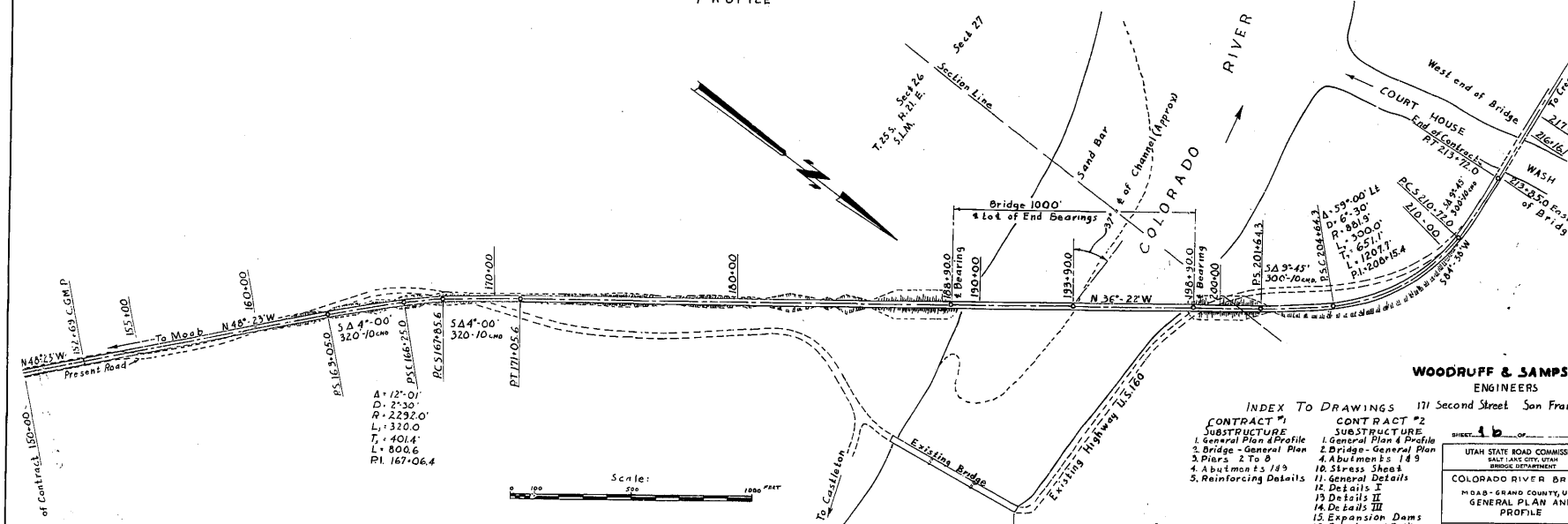
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO RIVER BRIDGE
MOAB - GRAND COUNTY, UTAH

DESIGNED BY R.S.	SCALE As Shown
DRAWN BY C.R.D.	TRACED
TRACED BY V.E.E.	APPROVED
CHECKED BY	SHOP PIPE SHOWN
BR. NO.	DRG. NO. C-285

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco





REVISIONS

NO.	DATE	BY

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

INDEX TO DRAWINGS

CONTRACT #1
SUBSTRUCTURE
1. General Plan & Profile
2. Bridge - General Plan
3. Piers 2 To 8
4. Abutments 1 & 9
5. Reinforcing Details

CONTRACT #2
SUBSTRUCTURE
1. General Plan & Profile
2. Bridge - General Plan
4. Abutments 1 & 9
10. Stress Sheet
11. General Details
12. Details I
13. Details II
14. Details III
15. Expansion Dams
16. Bearings & Railings
17. Concrete Deck Slab

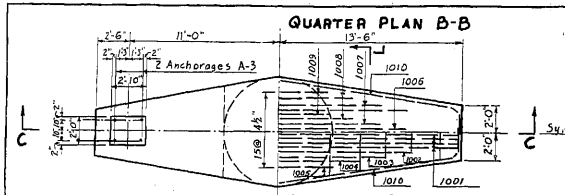
SUPPLEMENTARY DRAWINGS
51. Borings Geologic Sections
52. Final Borings (1953) Geologic Sections
53. Hydrographs

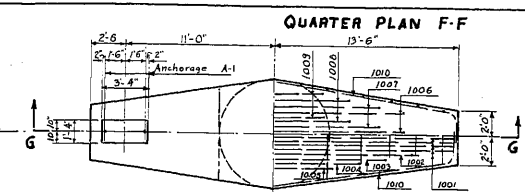
SHEET 1 b OF ____ SHEETS

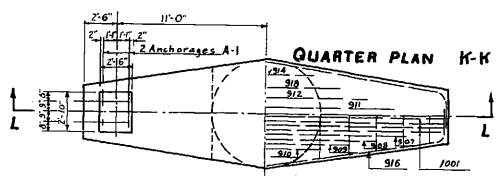
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

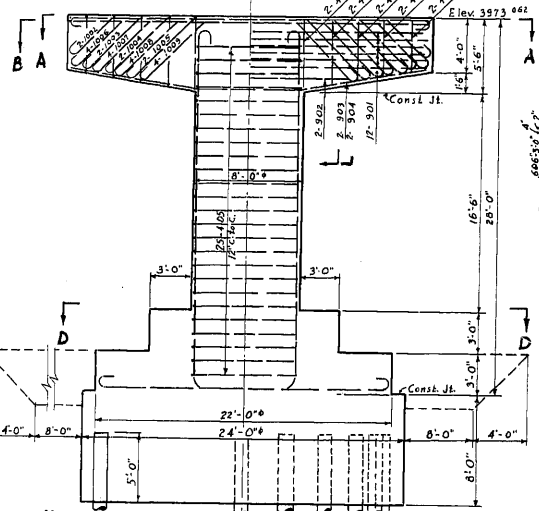
COLORADO RIVER BRIDGE
MOAB - GRAND COUNTY, UTAH
GENERAL PLAN AND PROFILE

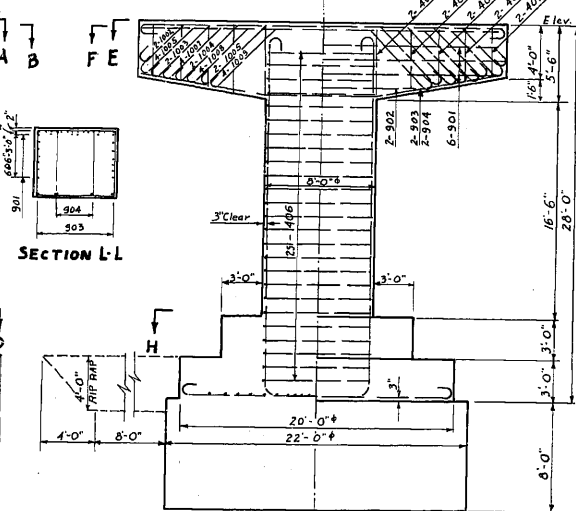
DESIGNED BY G.D.W.	SCALE AS SHOWN
DRAWN BY C.R.D.	DRAWN
TRACED BY V.E.E.	APPROVED
CHECKED BY G.D.W.	CHIEF BRIDGE ENGINEER
BR. No.	DRG. No. C 285

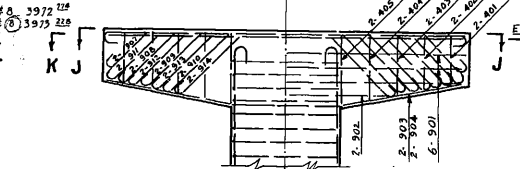








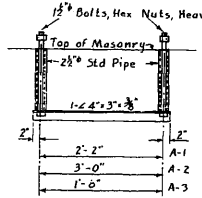


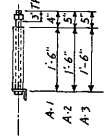


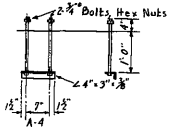
HALF SECTION L-L HALF ELEVATION

Portion of Pier not shown same as for Piers 2,4,6 & 8 except as noted

PIER No. 5





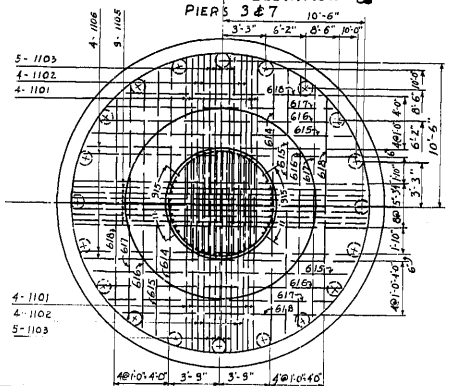


ANCHORAGES

List of Anchorages									
	No. Reqd. Per Nos.								
	1	2	3	4	5	6	7	8	9	Total
A-1	2				4				2	6
A-2		2		2		2		2		6
A-3			4				4			8
A-4	4								4	8

HALF SECTION C-C ELEVATION

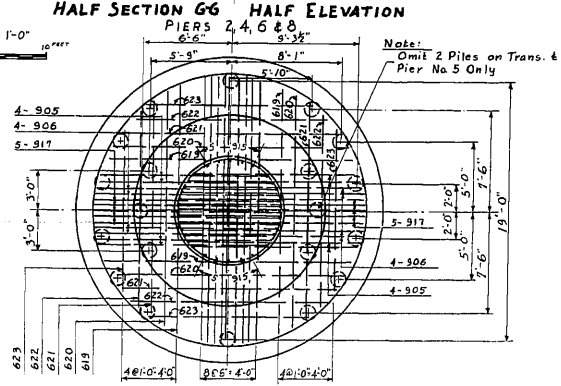
PIERS 3 & 7



Scale: ½"= 1'-0"

HALF SECTION G-G HALF ELEVATION

PIERS 2, 4, 6 & 8



Note: Omit 2 Piles on Trans. & Pier No. 5 Only

Reinforcing Steel detailed on Sh. #11

SUB STRUCTURE
PIERS 2 TO 8

SHEET 2 OF 11 SHEETS

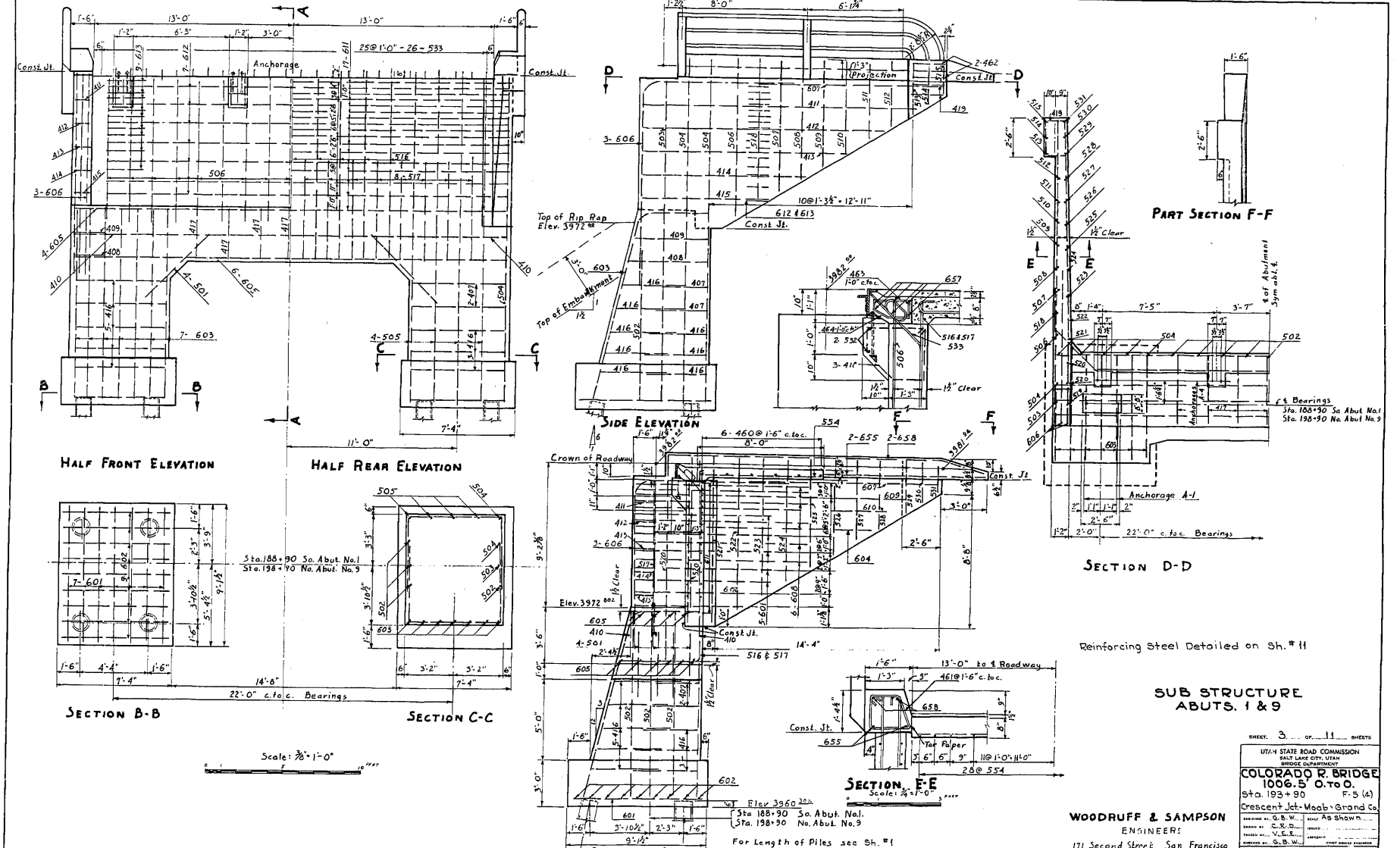
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F.S (4)
Crescent Jct.-Moab-Grand Co.

DESIGNED BY S.B.W. SCALE AS SHOWN
DRAWN BY C.R.D. CHECKED
TRACED BY V.E.E. APPROVED
CHECKED BY S.B.W. STATE BRIDGE ENGINEER

DATE 10-77-1-13 DWG. NO. C-285

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco



REVISIONS

DATE	BY	DESCRIPTION

SUB STRUCTURE ABUTS. 1 & 9

SHEET 3 OF 11 SHEETS

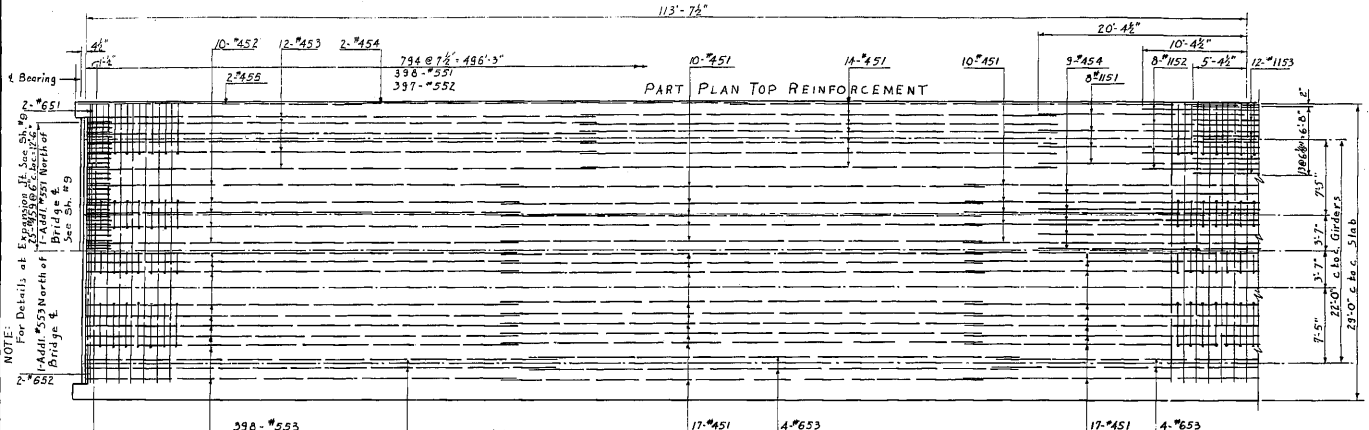
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

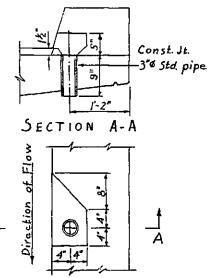
COLORADO R. BRIDGE
1006.5 O. to O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

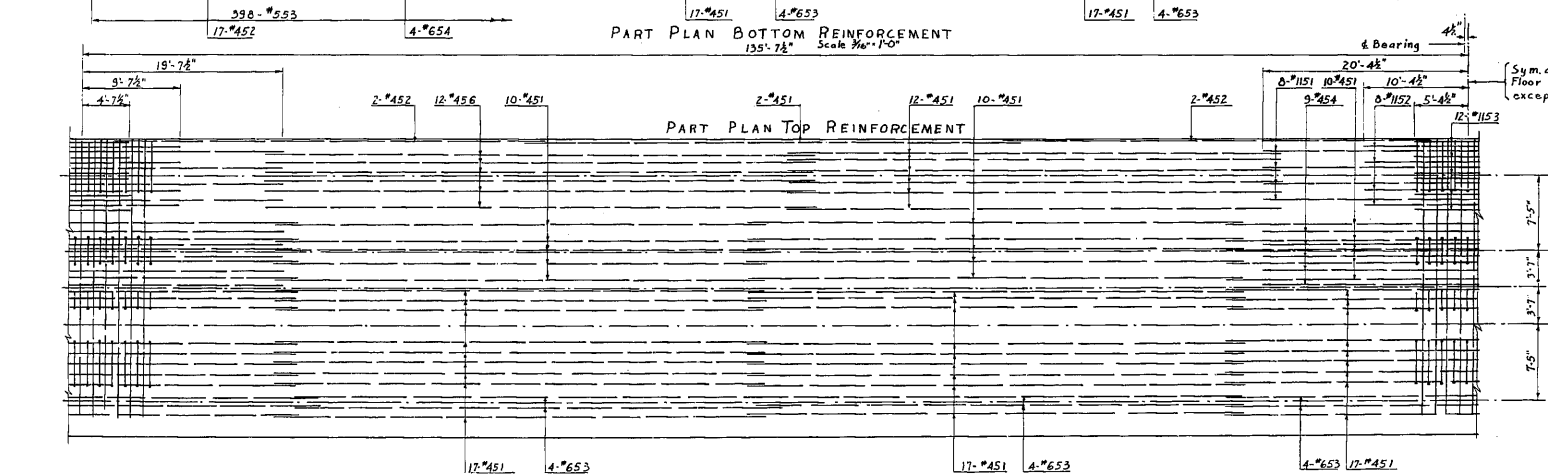
DESIGNED BY G.B.W. SCALE AS SHOWN
DRAWN BY C.S.D. TRACED
TRACED BY V.E.E. APPROVED
CHECKED BY G.B.W. CHIEF BRIDGE ENGINEER

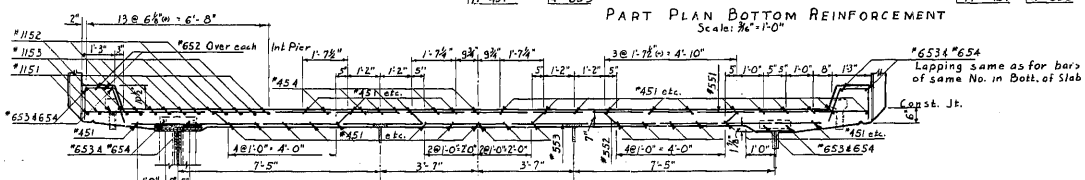
DR. NO. 10-77-1-13 DWG. NO. C-285

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco









Reinforcing Steel detailed on Sh. #6

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

SUPER STRUCTURE CONC. DECK & SLAB

SHEET 4 OF 11 SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

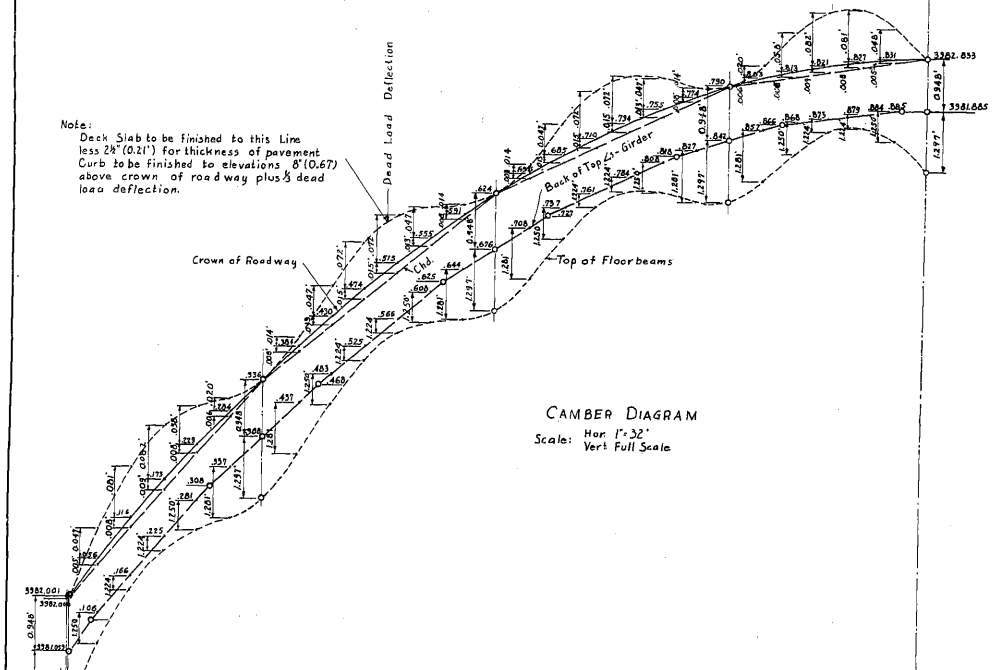
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5(4)
Crescent Jct.-Moab-Grand Co.

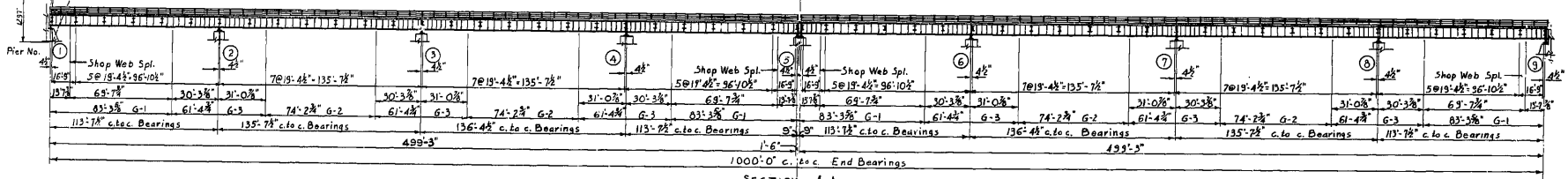
DESIGNED BY R.S. SCALE As noted
DRAWN BY C.R.D. TRACED
CHECKED BY V.E.L. APPROVED
QUANTITIES BY G.B.W. CHIEF ENGINEER

DR. NO. 10-77-1-13 DWG. NO. C-285

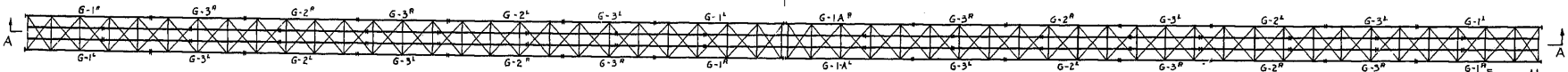
REVISIONS

DATE	BY	DATE	BY





SECTION A-A



PLAN

Scale: 1"=32'-0"

SUPER STRUCTURE GENERAL DETAIL

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. to O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

DESIGNED BY R.D. SCALE As noted
DRAWN BY C.R.D. ISSUED
TRACED BY V.E.E. APPROVED
CHECKED BY G.B.W. STATE BRIDGE ENGINEER

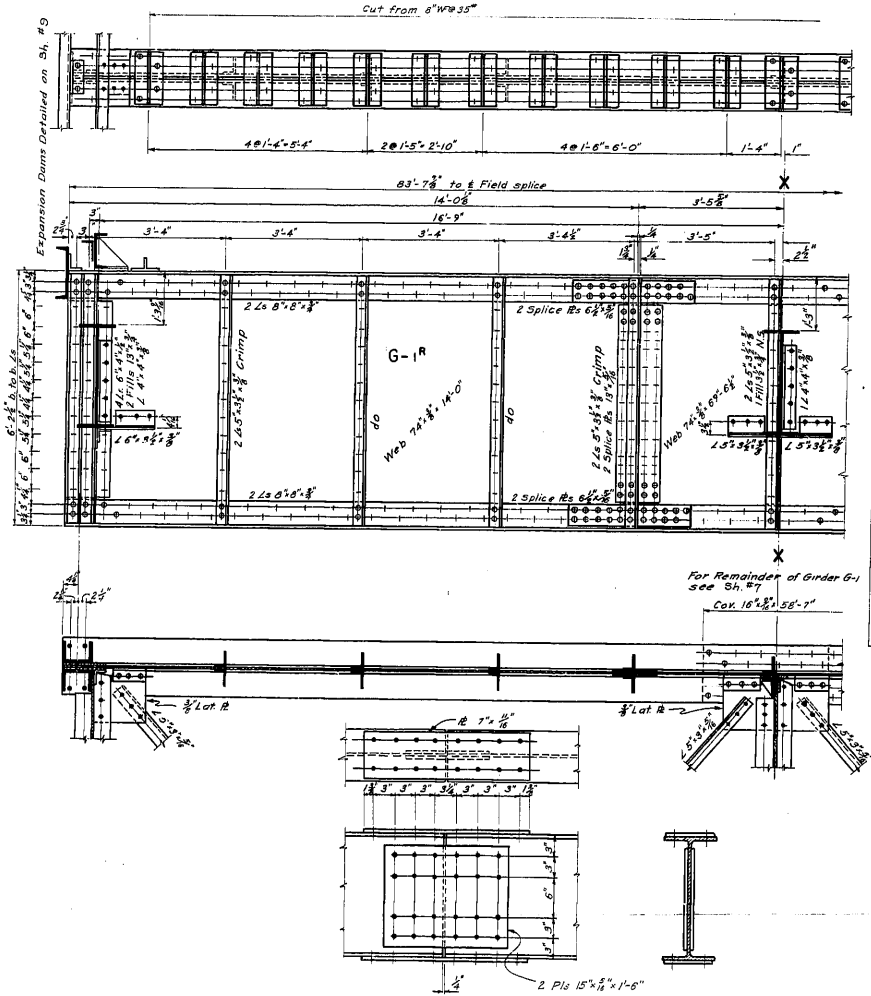
Br. No. 10-77-1-13 Proj. No. C-285

SHEET 5 OF 11 SHEETS

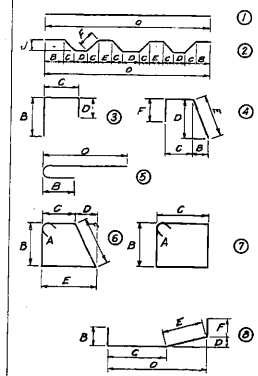
REVISIONS

C-285 SHT. 5 of 11

FED. ROAD PROJ. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
12	UTAH				



BAR TYPES



Bar No.	Hook 90° & or G	J	B	Weight per Ft.
4	6"	4"	4¾"	0.668
5	7"	5"	5"	1.043
6	8"	6"	5⅜"	1.502
11	10"	7"	7¼"	2.919

Bar No.	Type	A	B	C	D	E	F	J	O	Length Ft. Ins.	No. Reqd.	Weight lbs.
				DECK SLAB								
				No. 4 Bars								
451	1								41'-0	41'-0"	598	16775
452	1								42'-0	42'-0"	124	3475
453	1								50'-0	50'-0"	48	1603
454	1								39'-0	39'-0"	62	1614
455	1								27'-0	27'-0"	8	144
456	1								54'-0	54'-0"	48	1732
457	4		0'-8"	1'-0"	1'-1½"	1'-2"	0'-6"			2'-8"	2000	3566
458	3		1'-1"	1'-0"						2'-7"	2000	3430
459	5	0'-6"	0'-4½"					0'-4"	2'-6"	3'-0"	204	408
				No. 5 Bars							Total	34767
551	1								28'-3	28'-3"	797	23481
552	2		3'-6½"	0'-5"	4'-0"	2'-4"	0'-6"		27'-8"	28'-0"	794	23188
553	1								26'-0		797	21613
				No. 6 Bars							Total	68285
651	1								28'-3	28'-3"	8	340
652	1								26'-0	26'-0"	37	1250
653	1								27'-0	27'-0"	14.4	10165
654	1								46'-0	46'-0"	32	2211
				No. 11 Bars							Total	13966
1151	1								40'-0	40'-0"	48	10203
1152	1								20'-0	20'-0"	48	5101
1153	1								10'-0	10'-0"	72	3825
		COMPLETION or ABUTMENTS & CURBS									Total	19129
				No. 4 Bars								
460	1								25'-8	25'-8"	12	206
461	6	0'-7"	1'-2"	1'-1"	0'-3"	1'-4"	1'-2½"			5'-11½"	52	207
462	7	0'-7	1'-3"	2'-3"						8'-2"	8	43
463	3		0'-7"	1'-2"	0'-3"					2'-0"	42	53
464	8		0'-7"	0'-7"	0'-8"	0'-8"	0'-3"		1'-2"	2'-1"	42	56
				No. 5 Bars							Total	569
554	3		0'-7"					0'-3"	7'-8"	8'-3"	58	500
				No. 6 Bars								
655	1								20'-0	20'-0"	8	240
656	4		3'-0"	17'-0	0'-10	3'-1⅛"	0'-0"			20'-1⅛"	8	241
657	1								28'-8	28'-8"	12	517
658	8		0'-0	16'-10½	0'-10	3'-1⅛"	0'-0"		19'-10½	20'-0"	8	240
											Total	1238

NOTES:
Material - Structural Steel ASTM: A7-50T
Rivets ASTM: A 141-39
Rivets ⅞" ℄
Open holes 15/16" except as noted
Holes for Girder Splices Subpunched 15/16" and reamed to 1 1/16" with all parts assembled.
Holes for Floorbeam connections subpunched 15/16" and reamed to 1 1/16" to metal template.
Holes for Stringer Splices subpunched 13/16" and reamed to 15/16" to metal template.

SUMMARY OF WEIGHTS

No. 4 Bars	35336
No. 5 Bars	68785
No. 6 Bars	5704
No. 11 Bars	19129
Total	138954

SUPER STRUCTURE DETAILS I

SHEET 6 OF 11 SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. to O.
Sta. 193+80 F-5 (4)
Crescent Jct.-Moab-Grand Co.

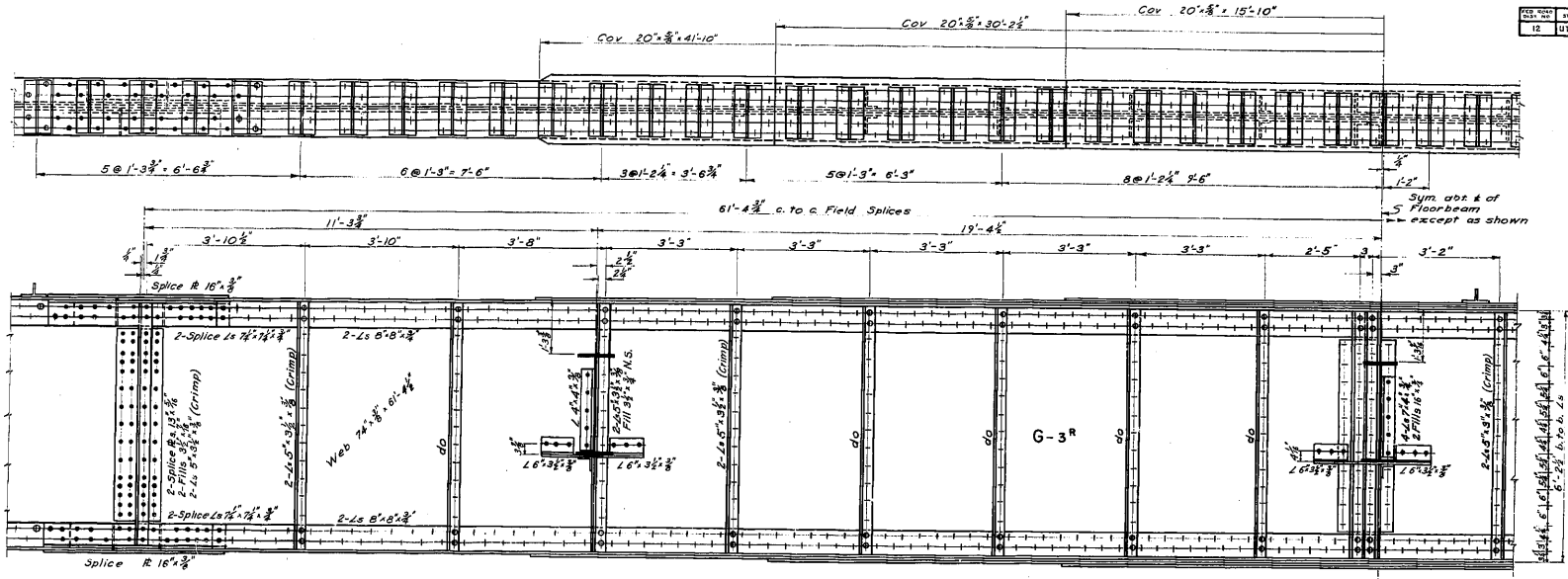
DESIGNED BY R.S.
DRAWN BY C.R.D.
CHECKED BY E.B.W.
SUBMITTED BY
APPROVED
CHIEF BRIDGE ENGINEER
SCALE 3/4"=1'-0"
ISSUED
BR. NO. 10-77-1-13
DRG. NO. C-285

REGISTERED PROFESSIONAL ENGINEER 963 STATE OF UTAH

WOODRUFF & SAMPSON
ENGINEERS
171 SECOND STREET SAN FRANCISCO

REVISIONS
NO. BY DATE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
12	UTAH				



NOTES:
Material- Structural Steel ASTM: A7-50T
Rivet Steel ASTM: A141-39
Rivets - ⅞" ϕ
Open Holes 15/16" ϕ except as noted.
Holes for Girder Splices subpunched 13/16" ϕ and reamed to 15/16" ϕ with all parts assembled.
Holes for Floorbeam connections subpunched 13/16" ϕ and reamed to 15/16" ϕ to metal template.

REVISIONS

MADE BY	CHKD.

SHEET 8 OF 11 SHEETS

SUPER STRUCTURE DETAILS III

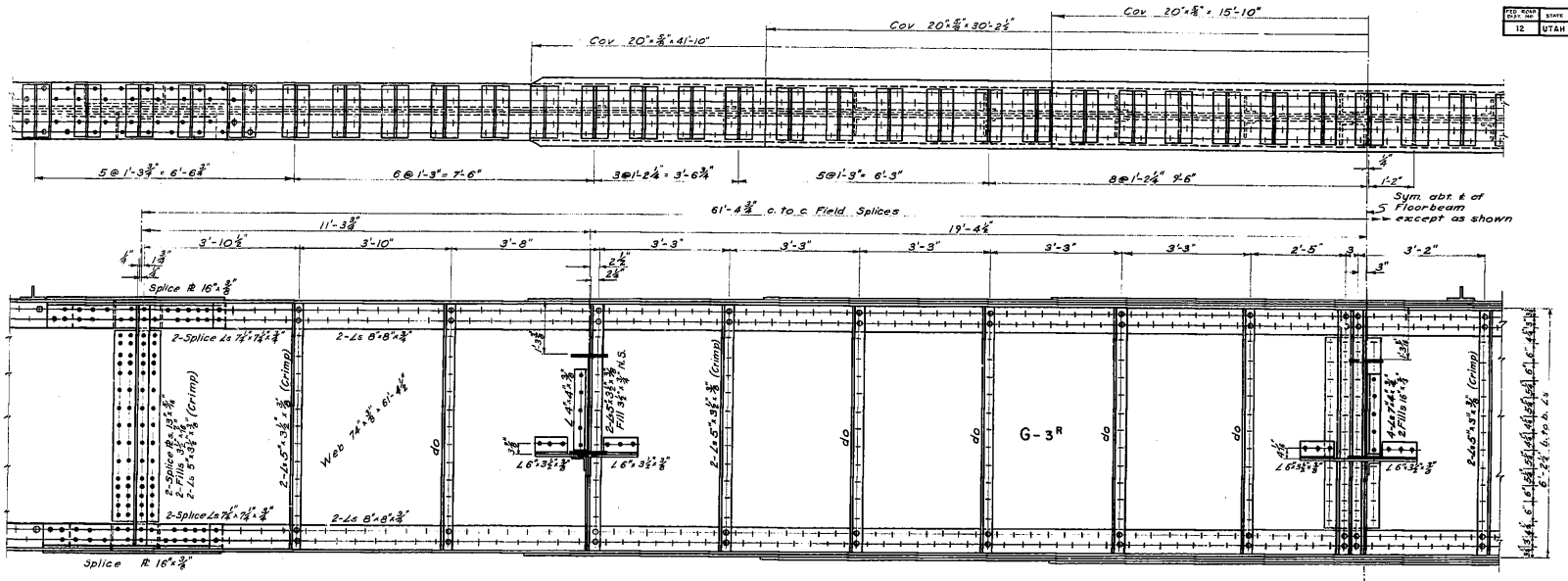
WOODRUFF & SAMPSON
ENGINEERS
171 SECOND STREET SAN FRANCISCO

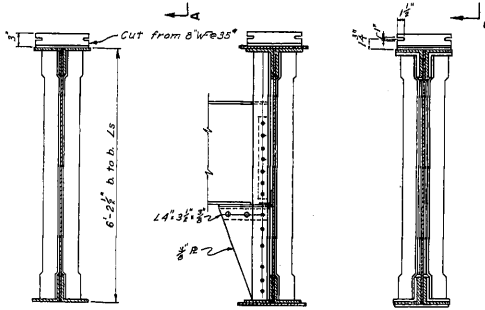
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.8' O. to O.
Sta. 1934+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

DESIGNED BY R.C.	SCALE ⅜"= 1'-0"
DRAWN BY E.E.D.	ISSUED
CHECKED BY R.F.M.	APPROVED CHIEF BRIDGE ENGINEER
SUBMITTED BY	
AB. NO. 10-77-1-13	DRG. NO. C-285

FED. ROAD DEM. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
12	UTAH				





SECTION B-B

SECTION C-C

SECTION A-A

SECTION D-D

NOTES:
Material - Structural Steel ASTM: A7-50T
Rivet Steel ASTM: A141-39
Rivets - 3/4"
Open Holes 15/16" ϕ except as noted.
Holes for Girder Splices subpunched 1 5/8" and reamed to 1 15/16" with all parts assembled.
Holes for Floorbeam connections subpunched 1 5/16" and reamed to 1 15/16" to metal template.

SUPER STRUCTURE DETAILS III

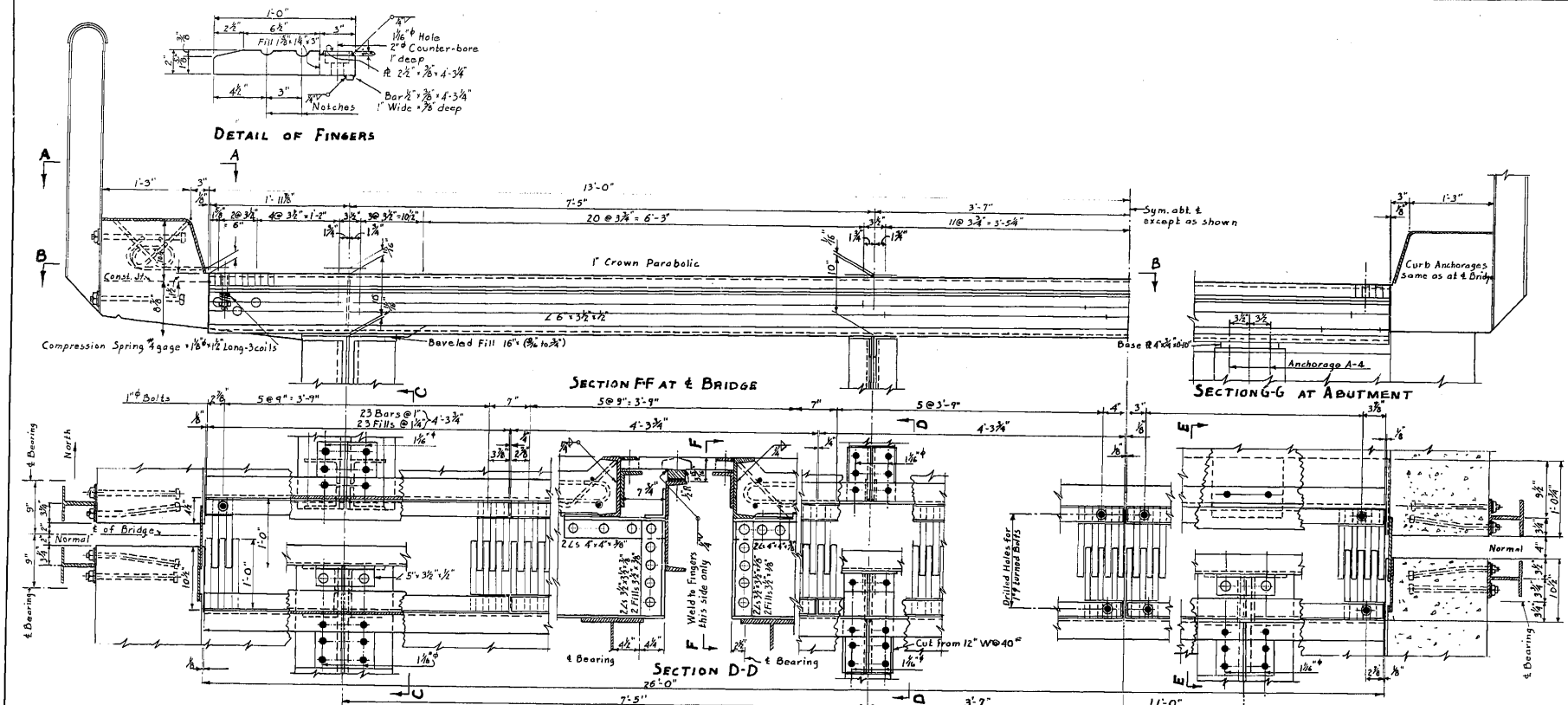
WOODRUFF & SAMPSON
ENGINEERS
171 SECOND STREET SAN FRANCISCO

SHEET 8 OF 11 SHEETS
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct-Moab-Grand Co.

DESIGNED BY R.S.	SCALE 3/4"=1'-0"
DRAWN BY C.R.O.	ISSUED
CHECKED BY D.D.W.	APPROVED CHIEF BRIDGE ENGINEER
EXAMINED BY	
DR. NO. 10-77-1-13	DRG. NO. C-285

REVISIONS

DATE	BY	DESCRIPTION



NOTES:
Material A.S.T.M. A7-S.I.T
Rivets ⅞" ϕ
Open Holes as Noted
Holes in bar Assembly to be drilled after welding
Holes in Supporting Members sub punched 1/16" ϕ and reamed with all parts assembled.
Holes for connections to girders and stringers reamed to metal templet

SHEET 9 OF 11 SHEETS

SUPER STRUCTURE EXPANSION DAMS

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

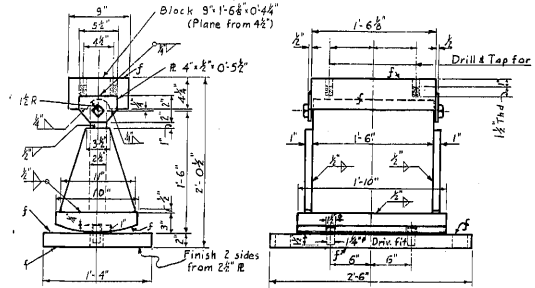
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

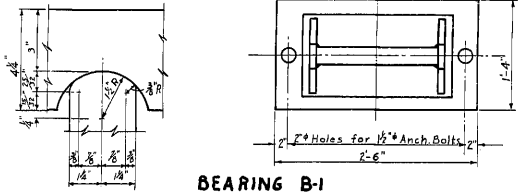
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

DESIGNED BY R.D.
DRAWN BY C.R.D.
TRACED BY V.E.E.
CHECKED BY G.B.W.
SCALE As Shown
CHIEF OF PLANS DIVISION

DR. NO. 10-77-1-13
DRG. NO. C-285

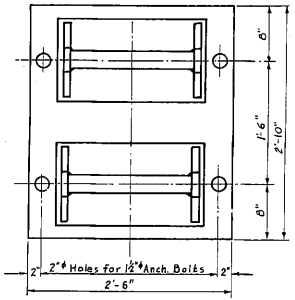
REVISIONS
DATE BY DATE BY





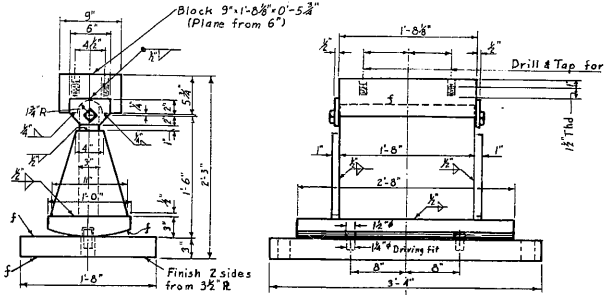
BEARING B-1

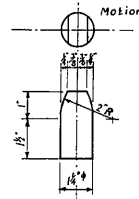
4 Reqd.
2 at Abut. 1
2 at Abut 9



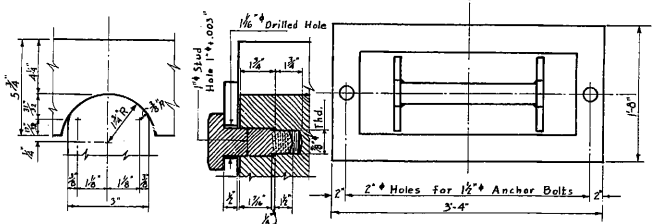
BEARING B-2

2 Reqd. Pier 5
One Bearing Consists of
1 PL 30" x Z (Planed from 2⅛") x Z'-10"
2 Rockers as shown for Bearing B-1





DETAIL OF DOWEL

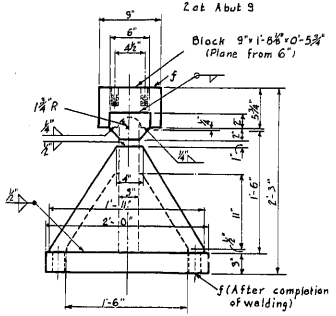


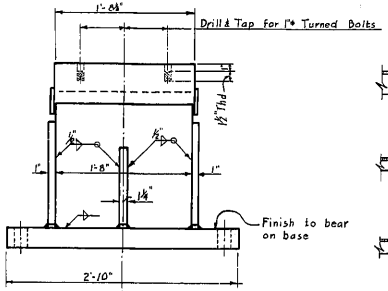
DETAIL OF PIN AND STUD

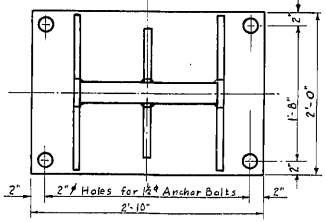
BEARING B-3

8 Reqd.
2 At Pier 2
2 At Pier 4
2 At Pier 6
2 At Pier 8

NOTES:
Material A.S.T.M: A7-50T
Shop Paint
Bearing Surfaces of Pin (1½" & 1¾" Rad)
1 Coat White Lead & Tallow
Other Machined Surfaces
1 Coat Red Lead and Linseed Oil

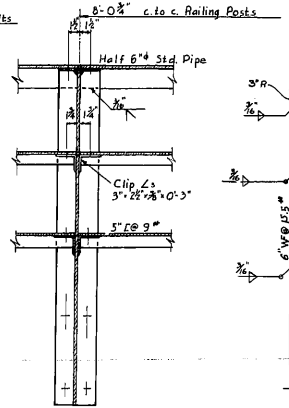


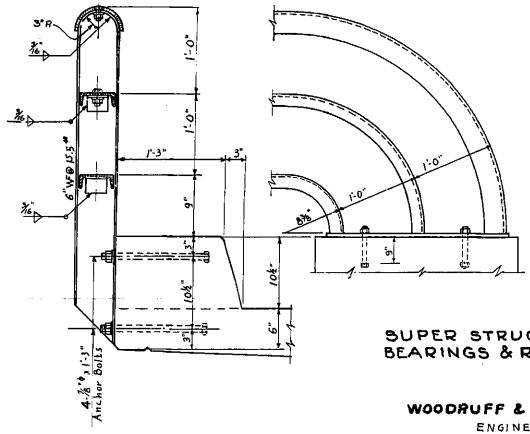




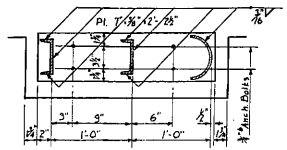
BEARING B-4

4 Reqd.
2 Pier 3
2 Pier 7





DETAIL OF RAILING

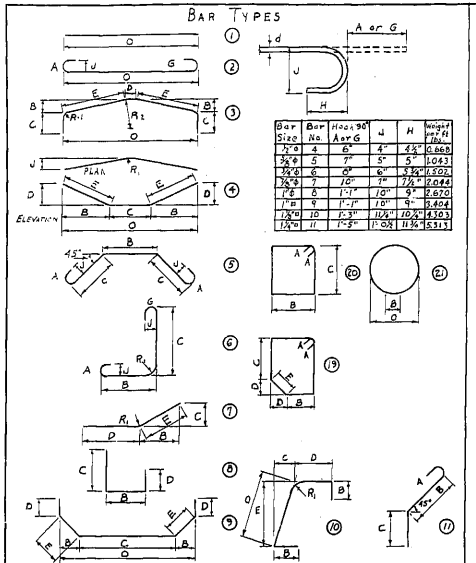


SUPER STRUCTURE BEARINGS & RAILING

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

SHEET 10 OF 11 SHEETS
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.
DESIGNED BY R.S. SCALE 1½" = 1'-0"
DRAWN BY C.R.D. ISSUED
TRACED BY V.L.E. APPROVED
CHECKED BY G.B.W. SHEET SHOWS: SUPERSTR.
DR. No. 10-77-1-13 DWG. No. C-285

REVISIONS
DATE | DESCRIPTION | BY



Bar Size	Bar No.	Hooks 90° A or G	L	H	Weight per ft lbs.
½"ø	4	6"	4"	4½"	0.668
⅝"ø	5	7"	5"	5"	1.043
¾"ø	6	8"	6"	5 15/16"	1.502
⅞"ø	7	10"	7"	7½"	2.044
1"ø	8	1'-1"	10"	9"	2.670
1"ø	9	1'-1"	10"	9"	3.404
1⅛"ø	10	1'-3"	10⅞"	10⅝"	4.303
1⅜"ø	11	1'-5"	11 0⅝"	11 9⅛"	5.313

Note: All dimensions refer to centers of bars except as otherwise noted.

SUMMARY OF WEIGHTS

No.4 Bars	5670
No.5 Bars	2934
No.6 Bars	9774
No.8 Bars	40485
No.10 Bars	41029
No.11 Bars	15 025
	100,804 lbs

Anchorages 1731 lbs.
102,535 lbs

SUB STRUCTURE
REINFORCING STEEL

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

SHEET 11 OF 11 SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

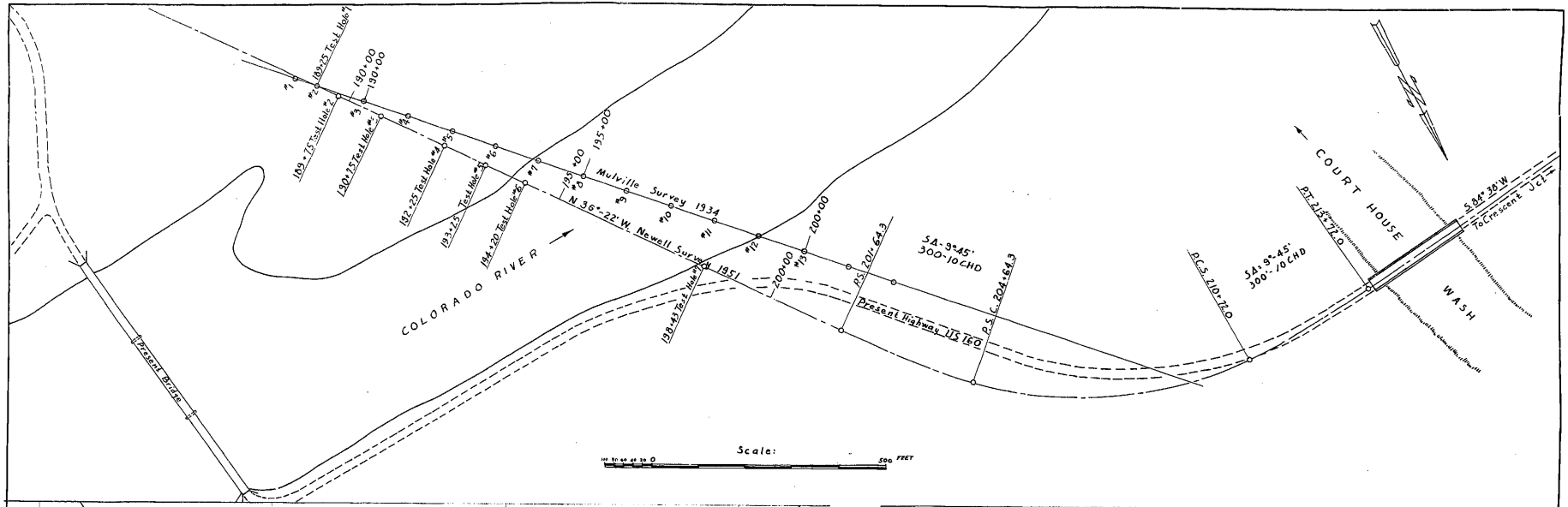
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

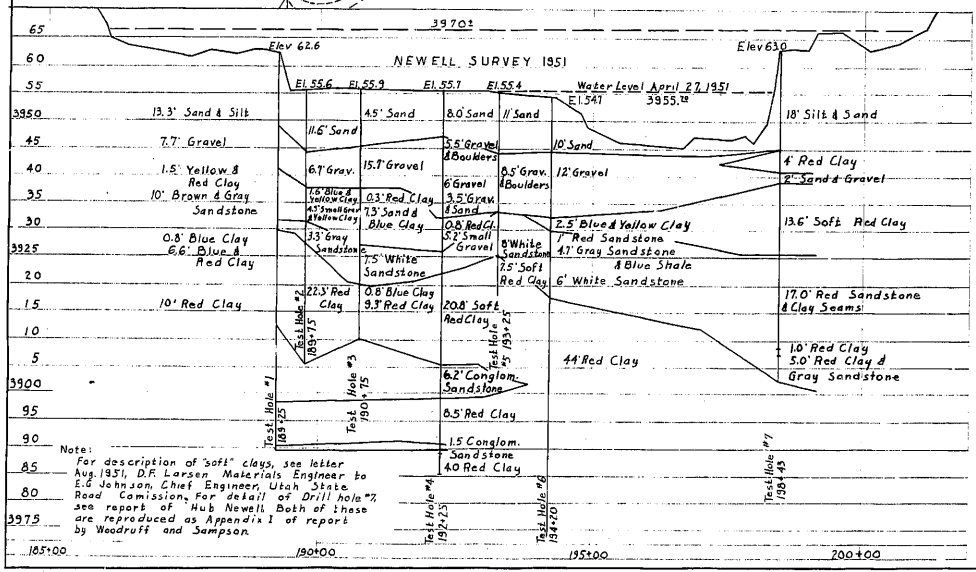
DESIGNED BY G.B.W. NAME None
DRAWN BY C.R.O. TRACED
TRACED BY V.E.E. APPROVED
COMPARED BY G.B.W. CHIEF ENGINEER

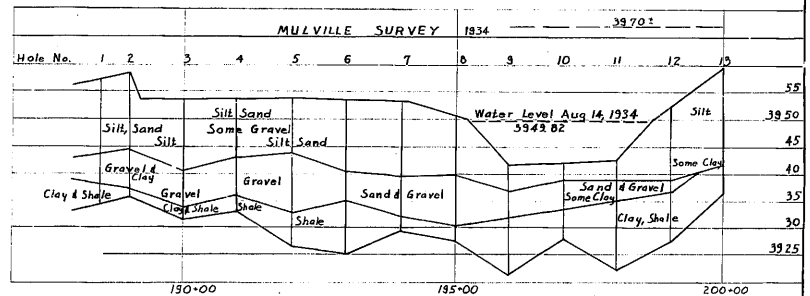
DATE 10-77-1-13 SHEET NO. C-285

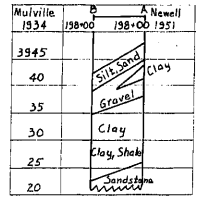
REVISIONS
DATE MADE BY

C-285 SHT. 11 of 11









BORINGS AND GEOLOGIC SECTIONS

SHEET S1 OF SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. to O.
Sta. 193+90 F-5 (4)
Crescent Jct.-Moab-Grand Co.

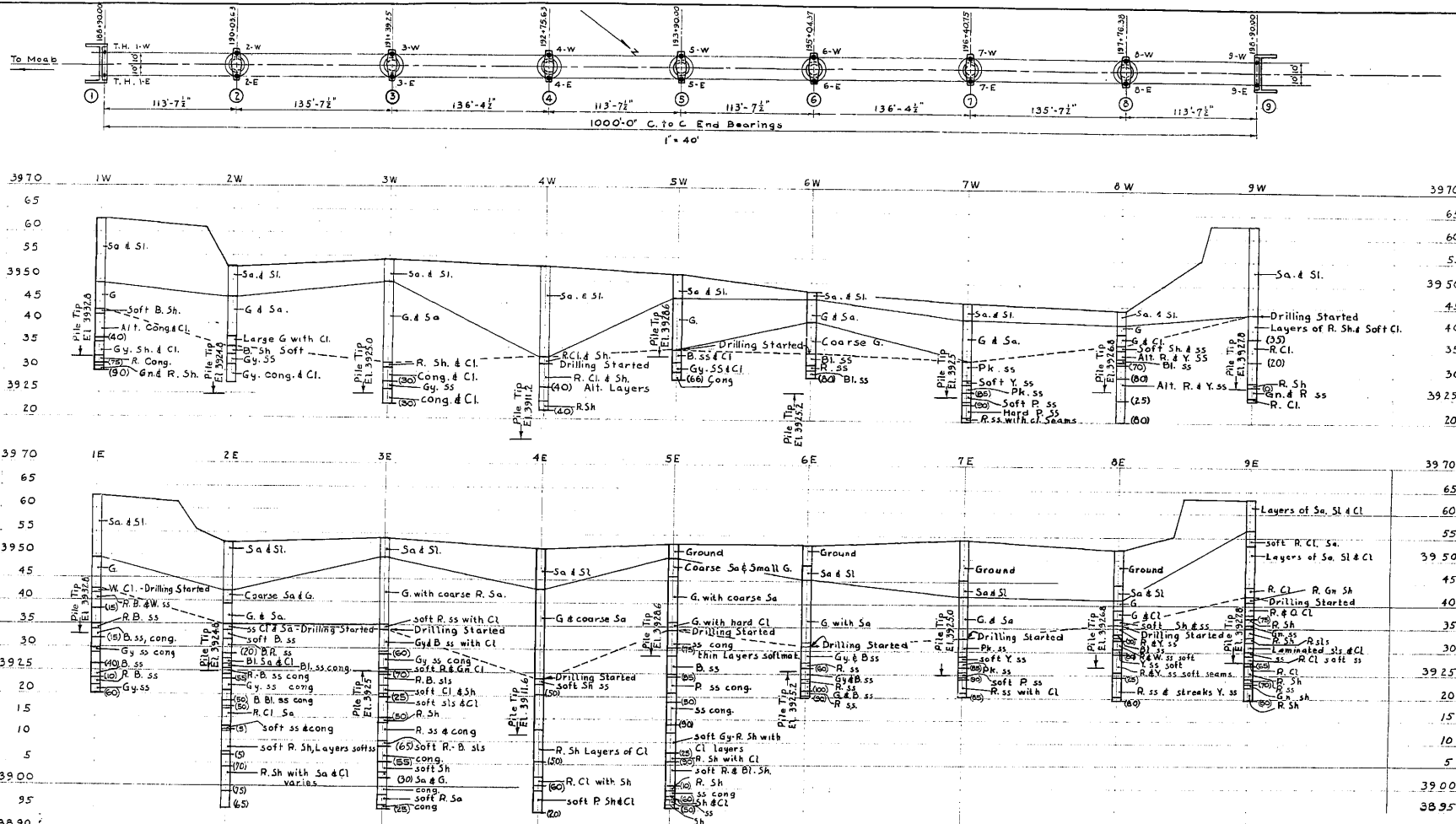
DESIGNED BY
DRAWN BY C.R.S.
TRACED BY V.R.P.
CHECKED BY S.D.W.
SCALE
ISSUED
APPROVED
QUAN. SPECIFICATIONS ESTIMATES

STR. No. 10-77-1-13 DWG. No. C-285

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

REVISIONS
DATE BY DATE BY

C-285 SHT. S1



ABREVIATIONS

Sa - Sand		B. - Brown	
Sl - Silt		R. - Red	
G - Gravel		Bl - Blue	
Cl - Clay		P - Purple	
ss - Sandstone		W - White	
cong. - Conglomerate		Gy - Gray	
sls - Siltstone		Gn - Green	
Sh - Shale		Pk - Pink	
Y - Yellow		O - Orange	
(25) - % Core Recovery			

FINAL BORINGS (1953) GEOLOGIC SECTIONS

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

SHEET 52 OF ... SHEETS

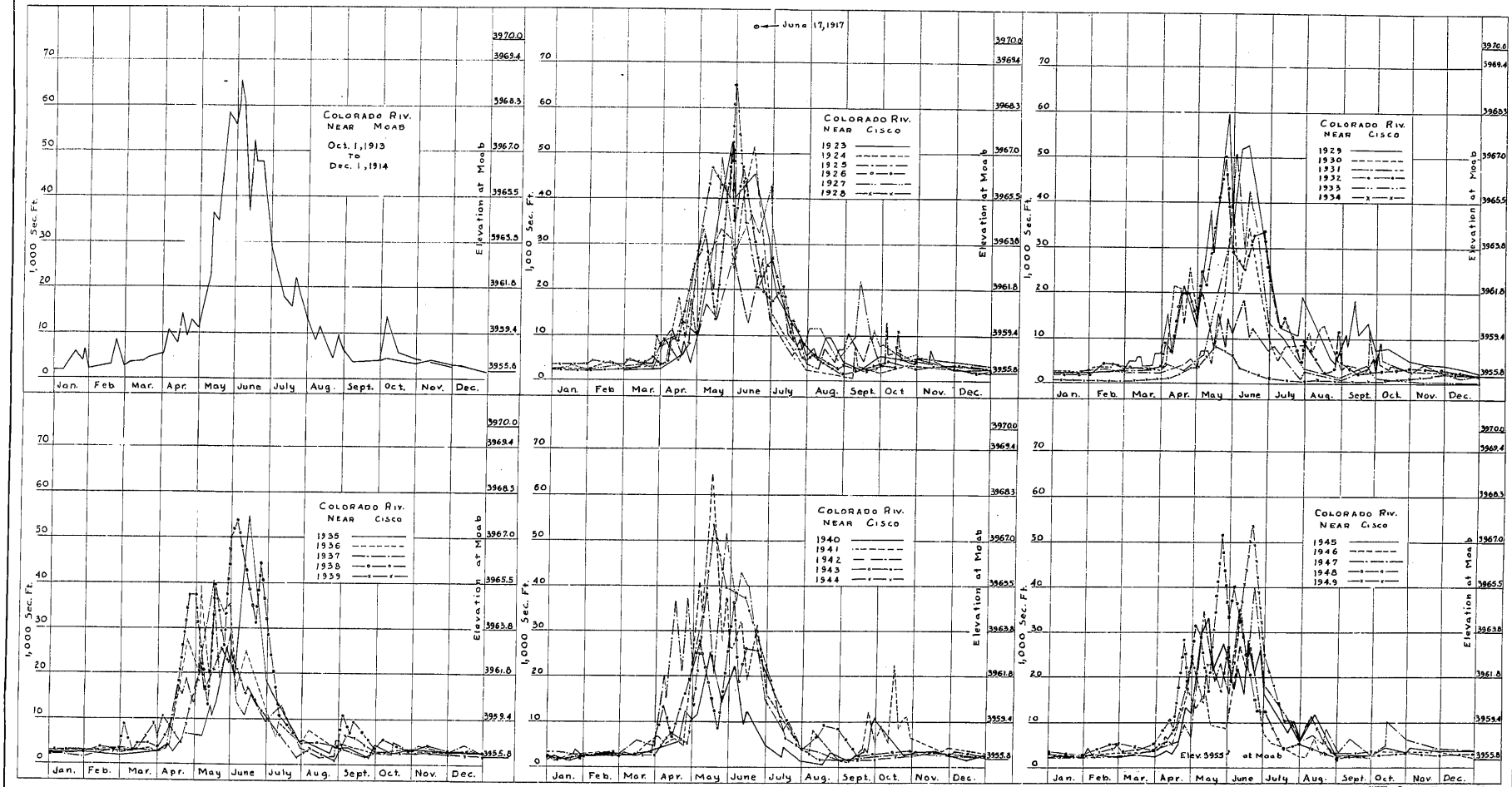
UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. to O.
Sta. 193+90 F-5(4)
Crescent Jct.-Moab-Grand Co.

DRAWN BY C.R.D.
TRACED BY V.E.E.
CHECKED BY G.B.W.

NO. 10-77-1-13
DWG. NO. C-285

C-285 SHT. S 2



REVISIONS

NO.	BY	DATE	DESCRIPTION

Note:- Data from U.S. Geological Survey.

HYDROGRAPHS

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

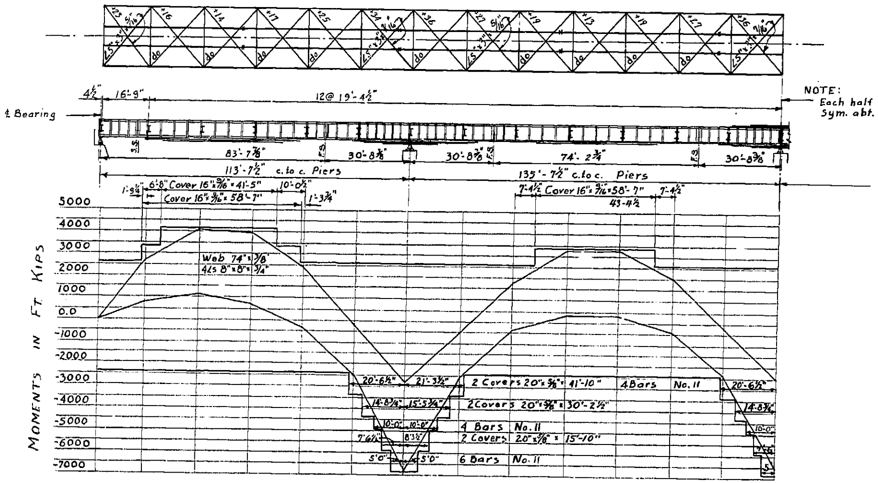
SHEET S3 OF ..... SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

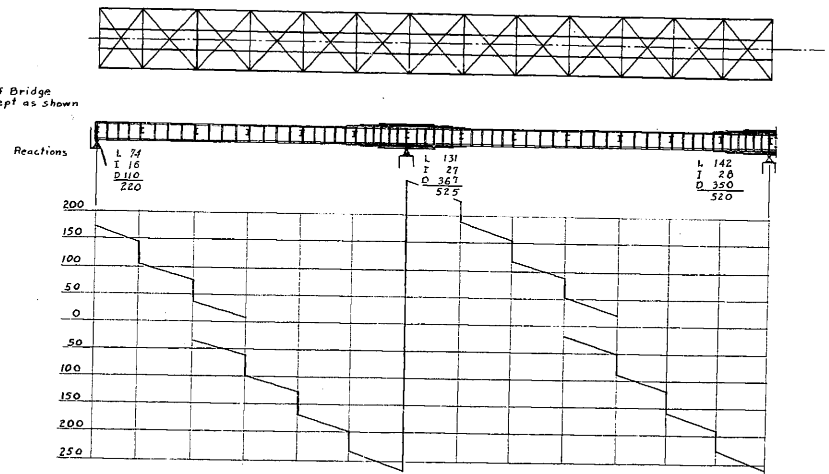
COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5(4)
Crescent Jct.-Moab-Grand Co.

DESIGNED BY ..... SCALE .....
DRAWN BY C.R.D. SHEET .....
TRACED BY V.E. APPROVED .....
CHECKED BY R.S. CHIEF BRIDGE ENGINEER

BR. NO. 10-77-1-13 DWG. NO. C-285



NOTE:
Each half of Half Bridge Sym. abt. ℄ except as shown



D.L. - N.C.	+1039	+1566	+1408	+555	-980	-3208	-1105	+312	+1036	+1070	+412	-937	-2974
D.L. - C.	+446	+677	+617	+270	-370	-1297	-415	+177	+479	+490	-208	-362	-1224
Total	+1485	+2243	+2025	+825	-1350	-4505	-1520	+489	+1515	+1560	+620	-1299	-4198
70% D.L.	+1040	+1572	+1418	+578	-945	-3153	-1064	+342	+1060	+1092	+434	-910	-2940

Maximum Moments

L.L.	+998	+1547	+1605	+1277	+603	+309	+507	+1131	+1473	+1487	+1164	+575	+409
I	+208	+324	+336	+267	+128	+65	+96	+217	+282	+285	+223	+110	+78
D.L.	+1485	+2243	+2025	+825	-945	-3153	-1064	+489	+1515	+1560	+620	-910	-2940
Total	+2691	+4114	+3966	+2369	-216	-2774	-461	+1837	+3270	+3332	+2007	-215	-2453

Minimum Moments

L.L.	-170	-363	-558	-737	-964	-1918	-856	-564	-601	-636	-672	-951	-1963
I	-34	-73	-116	-147	-193	-384	-172	-113	-120	-127	-134	-190	-393
D.L.	+1040	+1570	+1418	+578	-1350	-4505	-1520	+342	+1060	+1092	+434	-1299	-4198
Total	+836	+1134	+744	-306	-2507	-6807	-2548	-335	+339	+329	-372	-2440	-6554

Shears

D.L.-N.C.	69	53	37	19	2	16	33	51	69	87	104	123	118	100	83	65	47	29	12	7	24	42	59	77	95	113
D.L.-C.	30	22	16	8	1	8	14	22	29	35	44	52	50	41	34	26	19	10	4	4	10	19	26	33	41	50
D.L. Total	99	75	53	27	3	24	47	73	98	125	148	175	168	141	117	91	66	39	16	11	34	61	85	110	136	163
L.L.	59	59	42	42	27	27	41	41	55	58	68	75	81	74	63	56	46	42	31	30	41	44	55	61	72	79
I	13	13	10	10	8	8	10	10	13	14	15	17	16	14	13	13	10	10	8	8	10	10	13	13	14	15
Total	171	147	105	79	38	59	98	124	166	197	231	267	265	229	193	160	122	91	55	49	85	115	153	185	222	257
V - K.S.I.	6.16	5.30	3.79	2.85	1.37	2.13	3.53	4.49	5.96	7.10	8.33	9.62	9.55	8.25	6.96	5.78	4.40	3.28	1.98	1.77	3.06	4.15	5.52	6.67	8.00	9.26
√S	78.5	72.8	61.6	53.4	37.0	46.1	59.4	66.9	77.3	84.2	91.2	98.1	97.7	90.8	83.5	75.8	66.3	52.2	44.5	42.1	55.3	64.4	74.2	81.6	88.7	96.1
d Ins.	43.0	46.4	54.8	(a)	(a)	(a)	(a)	50.5	43.7	40.0	37.0	34.4	34.5	37.2	40.4	44.5	50.9	(a)	(a)	(a)	(a)	52.4	45.5	41.3	38.1	35.0
Top Flg. Rivets																										
q/I	.0138	.0133		.0130		.0130		.0138		.0138	.0133	.0130		.0133	.0138	.0133		.0133		.0133		.0133		.0138	.0130	.0130
Shears K/inch Hor.	2.36	1.95	1.40	1.03	0.49	0.77	1.27	1.71	2.29	2.72	3.07	3.47	3.45	3.05	2.66	2.13	1.62	1.21	0.73	0.65	1.13	1.53	2.04	2.55	2.88	3.35
Vert.	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
(b) Res.	2.50	2.10	1.61	1.30	0.94	1.11	1.50	1.89	2.42	2.83	3.16	3.57	3.55	3.14	2.78	2.28	1.80	1.45	1.08	1.03	1.39	1.73	2.19	2.68	2.99	3.45
Pitch Ins. (c)	3.54	4.22	(d)	(d)	(d)	(d)	(d)	4.70	3.66	3.14	2.80	2.48	2.50	2.82	3.20	3.90	4.95	(d)	(d)	(d)	(d)	(d)	4.05	3.32	2.96	2.58
Shear Connectors																										
q/I	.0111	.0106		.0103		.0103		.0111		.0111	.0076	.0081		.0096	.0111	.0111		.0106		.0106		.0106		.0111	.0096	.0081
Shears K/in.	1.90	1.56	1.11	0.81	0.39	0.61	1.01	1.38	1.85	2.19	2.21	2.16	2.15	2.20	2.14	1.78	1.35	0.97	0.58	0.52	0.90	1.42	1.63	2.05	2.13	2.08
Spacing Ins. (e)	15.8	19.1	29.0	30.0	(g)	(g)	29.7	21.7	16.3	13.8	13.6	13.9	13.9	13.7	14.0	16.9	22.2	30.9	(g)	(g)	33.3	24.6	18.4	14.6	14.1	14.4
" " (f)											52.0	28.2	28.3	52.4												

Concrete Floor Slab

7'-2" c. to c. Stringers S = 6.94

Moments

L = .2 × 12 × 6.94/6.66 = 2.50
I - 30% .75
D .56
3.81

7" Slab d = 5.5 1.44 d = 7.92
As = 3.81/7.92 = 0.48□" Reqd.
No. 5 @ 7½" c. to c. = 0.49□" Reqd.
Longitudinal 100/√6.94 = 38%
0.38 × 0.49 = 0.186□"
No. 4 @ 12" c. to c. 0.20□"

Stringers - 0.733 Lane Loads per Stringers

	Moments Max. Pos.	Moments Max. Neg.	Shear
L	82.0	-76.0	18.1
I	24.6	22.8	5.4
D	20.4	33.2	9.7
	127.0	132.0	33.2

18"WF @ 50# S.M. = 89.0
f = 17.8 K.S.I.

Floorbeams

	Moments	Shear
L	255	34.4
I	76	10.3
D	153	20.7
	484	65.4

30"WF @ 116#
f = 17.7 K.S.I.

Girder Sections

	Structural Steel Area Gr.	Structural Steel Area Net	Concrete Section n = 10	Reinforcing Steel	Steel Area	Section Moduli Non Composite Gr.	Non Composite Net	Composite Gr. (b)	Composite Net (c)
Web 74"×3/8"	27.75	22.13	7"×84" = 588						
4∠s 8"×8"×¾"	45.75	36.75	Equiv. Steel 58.8						
(A)	73.50	58.88		6-¾"φ	2.64	1850	1497	7500	1880
1 Cov. 16"×9/16" (a)	9.00	7.87	do	do	do				
	82.50	66.75				1950	1965	7600	2450
1 Cov. 16"×9/16" (a)	9.00	7.88	do	do	do				
	91.50	74.63				1960	2420	7650	3010
(A)	73.50	58.88	do			1850	1497	1970	2070
2 Covs. 20"×5/8"	25.00	22.50		4-1¼"φ+2-¾"φ	7.12				
	98.50	81.38				2753	2311	2860	2900
2 Covs. 20"×5/8"	25.00	22.50							
	123.50	103.88		do		3657	3125	3750	3720
				8-1¼"φ+2-¾"φ	13.36	3657	3125	3820	4260
2 Covs. 20"×5/8"	25.00	22.50		do					
	148.50	126.38				4560	3940	4710	5070
				14-1¼"φ+2-¾"φ	22.72	4560	3940	4810	5885

(a) Bott. Flg. Only
(b) Compression Flg.
(c) Tension Flg.

Specifications for Design - A.A.S.H.O. - 1949

Live Load - H20-S16-44 1.136 Lane Loads per Girder
Dead Load - Per Lineal Foot of Bridge

	Composite	Non Composite
Railings	80	
Curbs	340	
Paving	650	
Concrete Slab		2660
Stringers		105
Floorbeams & Knees		150
Bracing		25
Girders		780
Excess	470	
	1540	3660
Total	5200	

Notes:

(a) 58½" Max.
(b) Top Flg. Full Comp. Action. Other assum. give greater spc.
(c) ⅞"φ Bearing ⅜" Web @ 27 Ks.i. = 8.86K per rivet
16" Connectors at 30 Kips
(d) 5" Max.
(e) Comp. Action assuming Ten. in Conc. over supports.
(f) Comp. Action - Ten. in reinf. steel only over supports
(g) 10" Connectors - 30" max. spacing

SHEET S4 OF ..... SHEETS

UTAH STATE ROAD COMMISSION
SALT LAKE CITY, UTAH
BRIDGE DEPARTMENT

COLORADO R. BRIDGE
1006.5' O. TO O.
Sta. 193+90 F-5 (4)
Crescent Jct. - Moab - Grand Co.

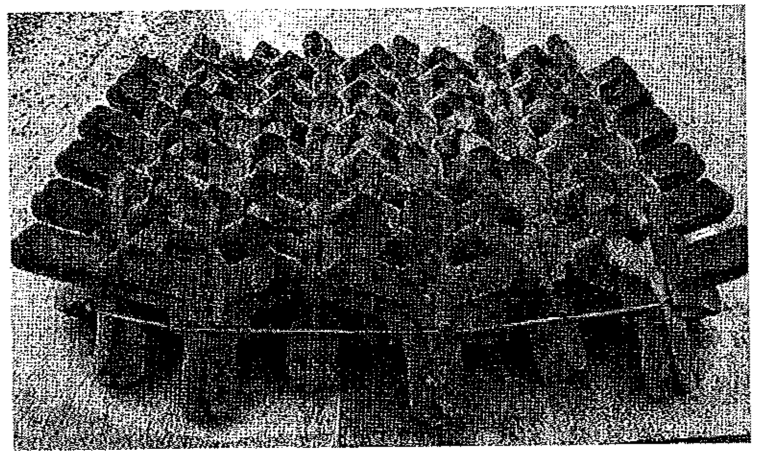
SUPER STRUCTURE STRESS SHEET

WOODRUFF & SAMPSON
ENGINEERS
171 Second Street San Francisco

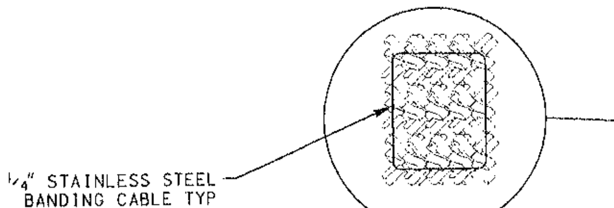
DESIGNED BY R.S.
DRAWN BY C.R.D.
TRACED BY V.E.E.
CHECKED BY G.B.W.
SCALE
ISSUED
APPROVED
CHIEF BRIDGE ENGINEER

BR. NO. 10-77-1-13 DRG. NO. C-285

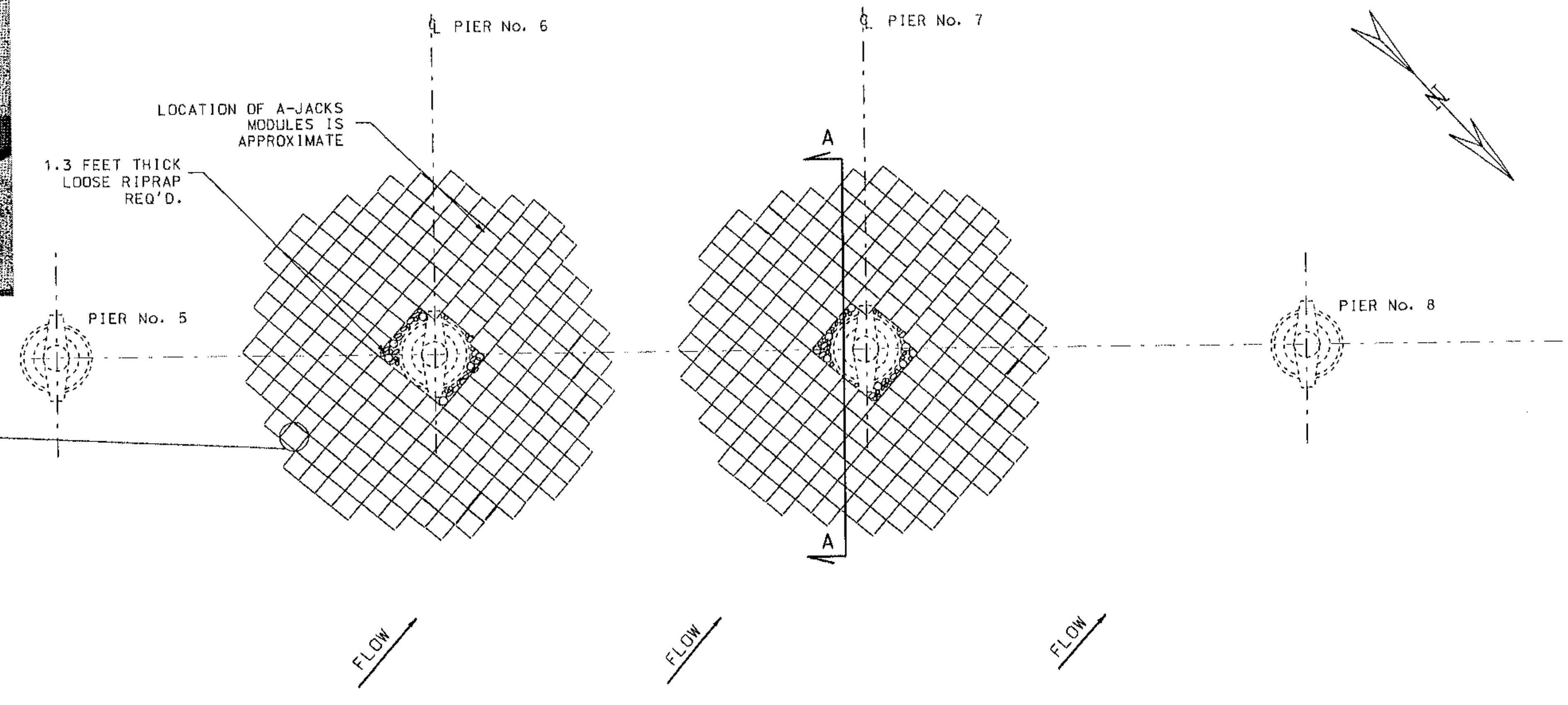
REVISIONS
DATE BY DATE BY



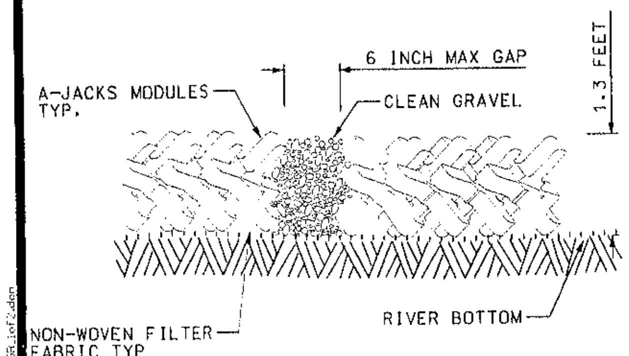
A-JACKS MODULE



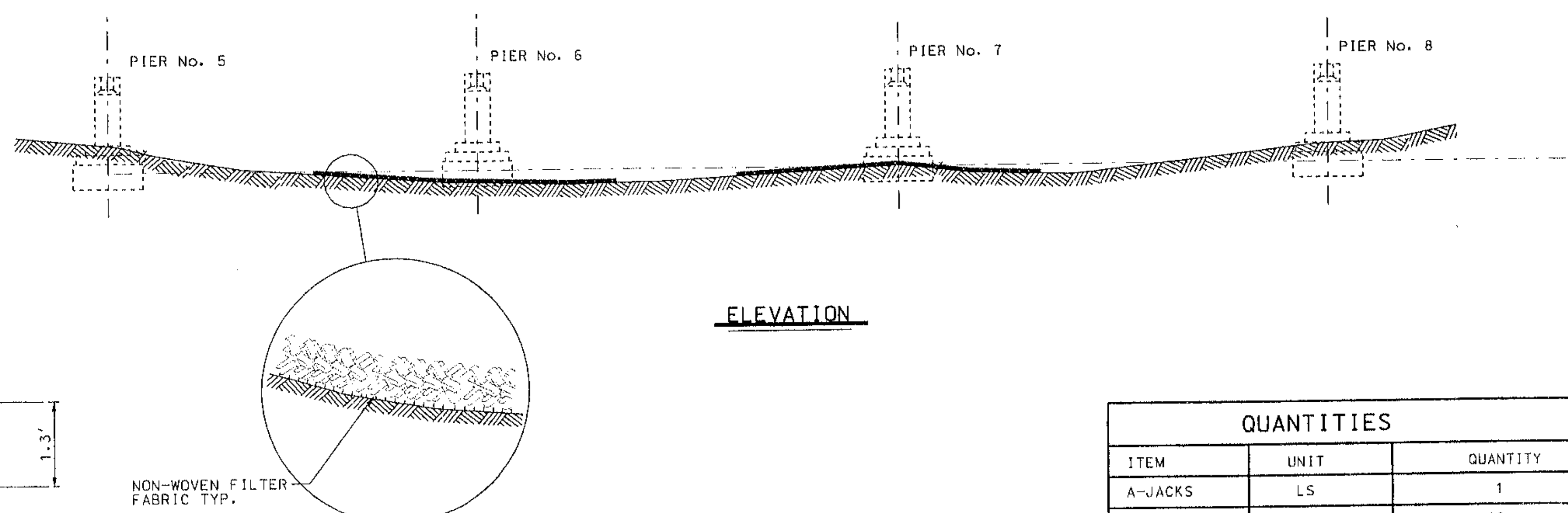
TYPICAL BANDED MODULE
36 A-JACKS UNITS PER MODULE



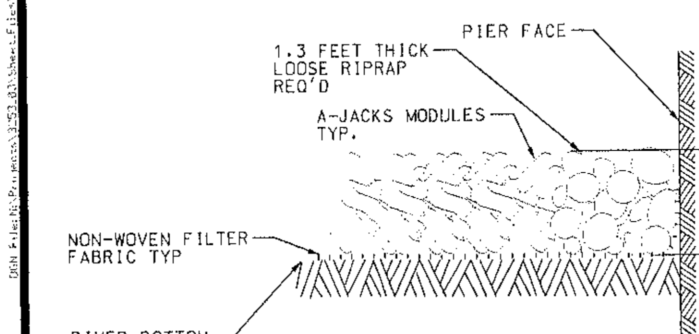
PLAN



A-JACKS MODULES PLACEMENT TOLERANCE



ELEVATION



A-JACKS NEXT TO PIER
SECTION A - A

QUANTITIES

ITEM	UNIT	QUANTITY
A-JACKS	LS	1
RIPRAP	CY	10
FRP.	LS	1

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN DS 9/02	CHECK CT 9/02	DRAWN MF 9/02	CHECK BW 9/02
QUANT. MF 9/02	CHECK DS 9/02		

APPROVAL RECOMM. 9/02 DATE — SENIOR DESIGN ENGR
APPROVED 9/02 DATE — UDOT BRIDGE ENGR

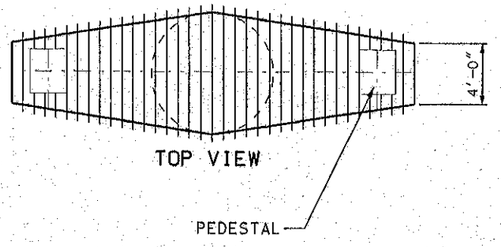
REVISIONS: NO. | DATE | BY | REMARKS

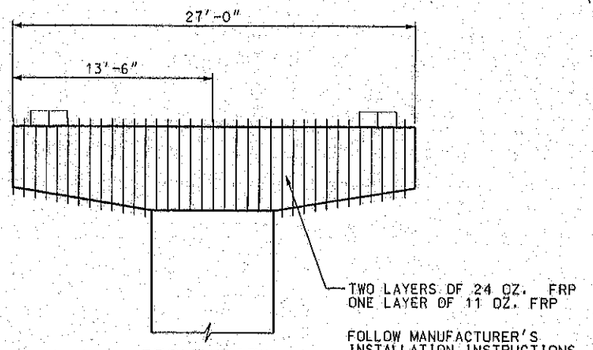
SR-191 OVER COLORADO RIVER
NEAR MOAB
SCOUR ABATEMENT SHEET
PROJECT NUMBER BHF-0191(13)129

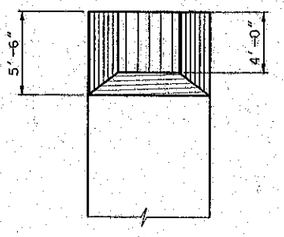
GRAND
COUNTY
C-285R
DRG. NO.
SHT. 1 OF 2

NOTE:

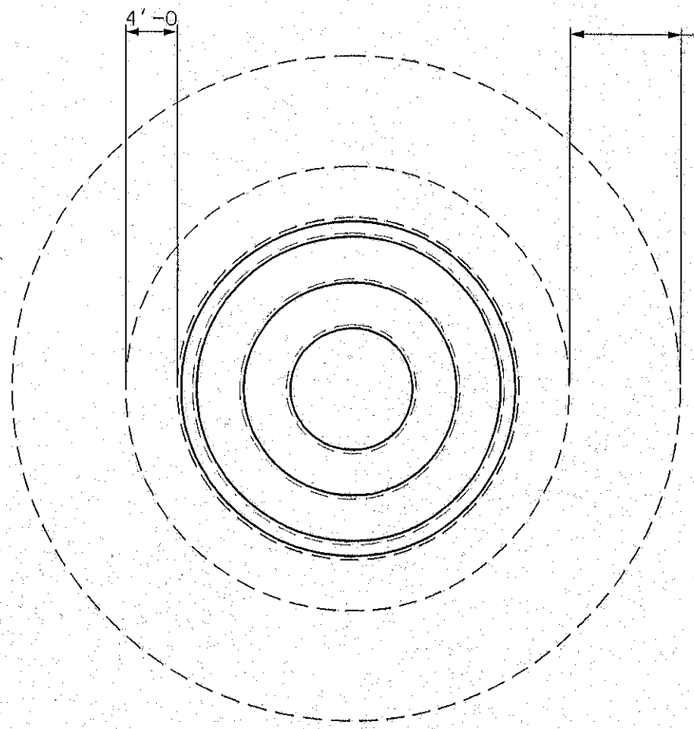
DIMENSIONS ARE APPROXIMATE
CONTRACTOR TO VERIFY EXACT
DIMENSIONS



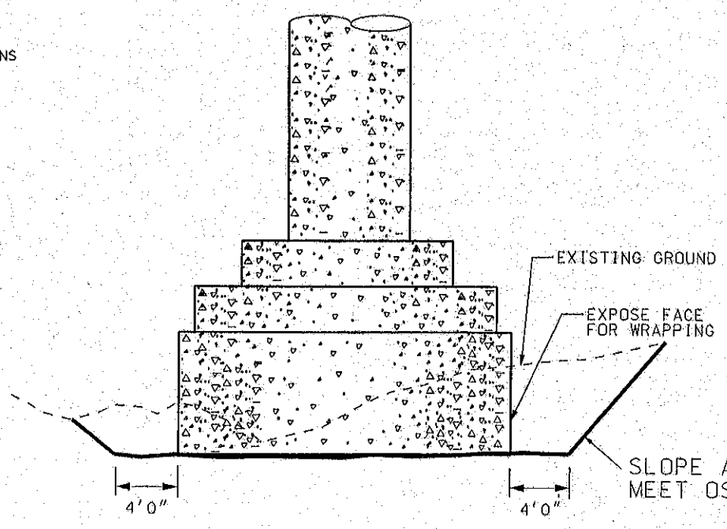




BENT CAP NO. 5 FIBER WRAPPING DETAIL



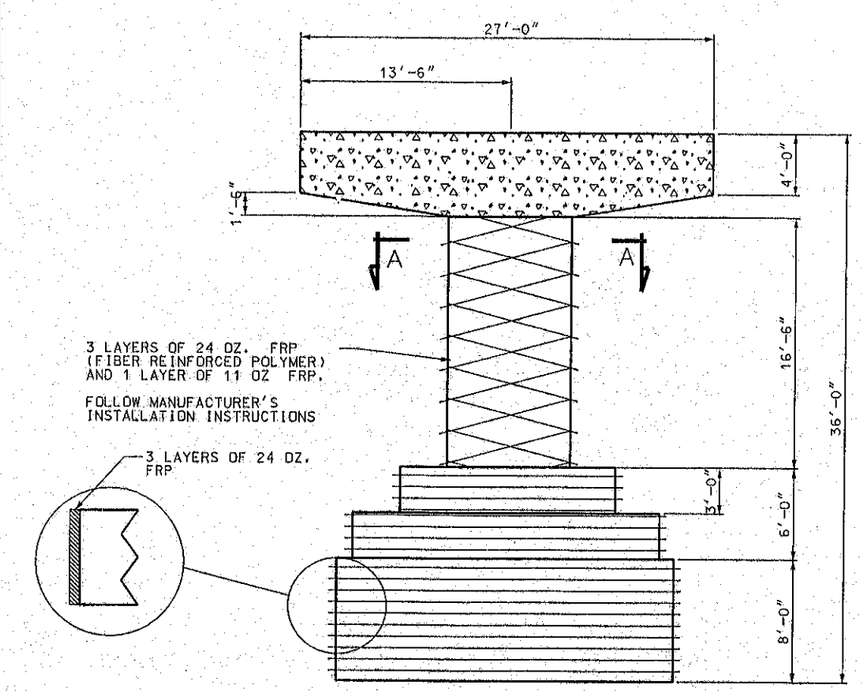
EXCAVATION DETAIL PLAN



EXCAVATION DETAIL

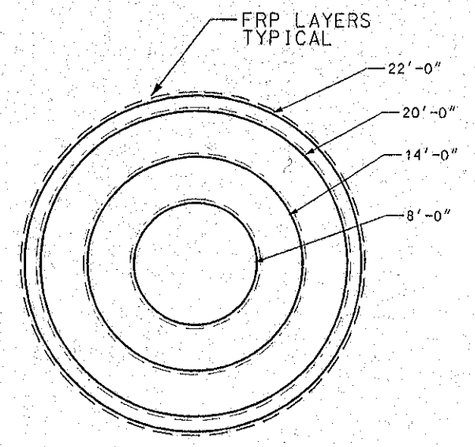
NOTE:

REFILL ANY EXCAVATED AREA AROUND PIER WITH EXCAVTED RIPRAP AND CLEAN GRAVEL MATERIALS AFTER INSTALLATION OF FRP WRAP. INFILL RIPRAP SURFACE WITH GRAVEL AND GRADE SURFACE TO ALLOW PROPER PLACEMENT OF A-JACKS MODULES.



ELEVATION

PIER NO. 6 AND 7 FIBER WRAPPING DETAIL



SECTION A-A

PIER NO. 6 AND 7 FIBER WRAPPING DETAIL

REVISIONS

NO.	DATE	BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN LC 9/02 CHECK CT 9/02
DRAWN MR 9/02 CHECK BW 9/02
QUANT. LC 9/02 CHECK DS 9/02

APPROVAL RECOMM. 9/02 DATE — SENIOR BRIDGE ENGR.
APPROVED 9/02 DATE — DEPUTY BRIDGE ENGR.

SR-191 OVER COLORADO RIVER
NEAR MOAB
REPAIR DETAILS SHEET
PROJECT NUMBER BHF-0191(13)129

GRAND COUNTY
C-285R DRG. NO.
SHT. 2 OF 2

14-JAN-2003 DGN File: \\EPW-Projects\13253.03\Sheet Files\Structures\13253_STR_C-285R_2of2.dgn